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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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MEAN LAKE LEVELS.

The gauge records of the United States Lake Survey show the following mean stages of water for May, above mean sea level: Lake Superior, 601.78 feet; Lakes Huron and Michigan, 579.71 feet; and Lake Erie, 571.95 feet. These stages show Lake Superior to have been 0.17 foot lower than during same month last year, and 0.04 foot lower than in May, 1895; Lakes Huron and Michigan were 0.70 foot lower than during same month last year, and at same elevation that they were in May, 1895; Lake Erie was 0.55 foot higher than during same month last year, and 0.38 foot higher than during May, 1895.

THE HARTER ACT.

The attention of the Interstate Commerce Commission has been called to a defect in the statute known as the Harter Act (27 Stat. L., 445), which is designed to prohibit the insertion in bills of lading of clauses exempting ocean carriers from liability for loss or damage due to "negligence, fault, or failure in proper loading, stowage, custody, care, or proper delivery" of property carried between the United States and foreign ports. The act contains in section 3 an exception that neither the vessel nor its owner shall be held responsible for damage or loss resulting from "faults or errors in navigation or in the management of said vessel," if due diligence has been used to make the vessel seaworthy and properly manned, equipped and supplied. Faults or errors in navigation may be covered usually by insurance, but negligence due to mismanagement of the vessel while in port, which results in damage to the cargo, is not understood to be a subject of insurance, and the shippers have now no protection against losses from that cause under such exception as to errors of management in section 3 of the Harter Act. This exception was construed by an English court in 1895 in the case of The Glenochil, where it was held that such exception is not confined to the management of the vessel during navigation, but that it also covers the time while the cargo remains on board the vessel in port and undelivered. The result is that the very purpose of the act—to prevent the carriers from exempting themselves from their common law liability—is defeated when damage to cargo occurs through negligent management while the vessel is not being navigated. The Commission understands that it has no duties to perform under this act, but as questions somewhat similar also arise under the act to regulate commerce and as both statutes apply to interstate or international commerce, it is believed that the defect in the Harter Act resulting from operation of the exception in section 3, as to "management," may properly be brought to the notice of Congress, and this has been done in the fifteenth annual report.

WATER COMPETITION AS AFFECTING WHEAT AND FLOUR RATES.

Carriers put forward as a reason for these lower rates on wheat from Chicago to the seaboard the peculiar conditions as to water competition which surround these two commodities. The cost of carrying wheat by water from Chicago to Buffalo during the past season has averaged about 1½ cents per bushel, and the rate from Buffalo to New York has been about 3½ cents per bushel, making a total rate by lake and rail of 5 cents per bushel, or about 8 cents per hundred. Upon this rate the grain is received in the ship's hold at Chicago and delivered at the ship's side in New York harbor. The published export rate during most of the past summer has been 13½ cents from Chicago to New York. Ordinarily it is not a matter of much consequence whether wheat moves between these two points by water or by rail, and plainly it cannot move to any extent by rail when that rate is 5 cents higher than the water rate.

Flour is also shipped by water from Chicago and corresponding points to the seaboard, but the conditions under which it moves are somewhat less favorable to the obtaining of a low rate than those which prevail in case of wheat. Wheat is largely carried by so-called tramp vessels, which take cargoes of grain from some point upon the Great Lakes, like Chicago or Duluth to Buffalo, and carry cargoes of coal in the opposite direction. Flour is not transported by these tramp steamers, since they are not rigged for that service, but is taken altogether by what are known as "line boats;" that is, boats carrying package freight between Buffalo and other lake ports. These vessels also carry grain when they cannot obtain more desirable lading.

It results that the actual expense of transporting flour from Chicago to New York by water is greater than the expense of transporting wheat, and that the rates in force for such water transportation are actually considerably higher upon flour than upon wheat. If the rail carrier obtains this business, it must meet, or nearly meet, the water rate; in other words, it can obtain a better rate upon flour than upon grain. That this is not an imaginary condition appears from the fact that during the months of June, July, August and September, 1901, 17,595,277 bushels of wheat left Chicago by water as against 2,392,019 bushels by rail. It was also said that during the season of navigation the bulk of the flour at or passing through Chicago and other lake ports was transported by water.

The tramp boats above referred to as carrying the bulk of the wheat are in no way controlled by rail carriers. The line boats are, as a rule, directly or indirectly operated in connection with lines of railway, and the flour rates are made by agreement between these different lines in the same way that rail rates are, being, therefore, to an extent in the control of rail carriers. The lines of railway leading from Buffalo to New York make a very low rate upon ex-lake wheat and do not make a correspondingly low rate upon ex-lake flour. To an extent, therefore, rail carriers are responsible for these higher lake-and-rail rates upon flour, but after all has been said, it is evident that in this water competition inheres a condition which during a considerable portion of the year, if given its natural result, must secure to wheat a somewhat better rate than to the manufactured product. This applies to all wheat which is in any sense tributary to the Great Lakes, and that is the bulk of the wheat raised in this country.

MR. C. H. ELLIS, manager of the New Orleans division of the United Fruit Co., says: "We are successfully using oil as fuel on our steamship Breakwater, which has made four trips to Central America, and we contemplate converting several more of our steamers during the months of July and August, or as soon as we can spare them from the service. Our experience has been that our saving in the cost of this fuel as compared to coal, including the amount saved in dispensing with firemen, will reach about 50 per cent. We are burning about four barrels of oil to one ton of coal, and the cost of our oil, delivered at steamer's tanks, is 50 cents per barrel. We expect to reduce this quantity by further experiments, and will acquire sufficient knowledge before converting our other steamers to make even a greater saving than we are at present."

THE SHIPBUILDING INDUSTRY.

A BULLETIN dealing with the shipbuilding industry in the United States, issued by the Census Bureau, shows that the number of establishments engaged in the building and repairing of vessels, boats, etc., increased from 953 in 1850 to 1,116 in 1900, or 17.1 per cent., while the capital invested increased from $5,373,139 to $77,362,701, or 1,339.8 per cent. During the same period the average number of wage-earners increased from 12,976 to 46,781. The total value of constructions and repairs increased from $16,937,525 to $74,578,158. Of the latter sum a large part represents work done for the Navy and War Departments. It appears that during the year ending June 30, 1900, the sum of $8,554,862 was disbursed in the Navy Department to private shipbuilding establishments for construction and repairs, and the sum of $5,493,556 in the War Department, the total being $14,048,438, or 18.8 per cent. of the total value of products reported by private shipyards for the census year. Of the amount disbursed in the War Department $1,291,581 was for "fitting up chartered transports," the remainder being expended "for refitting and repairs of vessels owned by the War Department."

GRAIN RATE TO NEW ORLEANS.

"The American Elevator and Grain Trade" Chicago, has the following to say anent the Mississippi grain trade to New Orleans:

"The whaleback barge grain route to New Orleans from St. Louis, seems to have been a failure, in spite of its bright outlook a season or more ago. At any rate, the telegraph says that on June 9 the St. Louis Steel Barge Co. closed a deal by which it will convert its steel whaleback grain barges A and B into carriers for crude Texas oil. They will have a capacity of 15,000 gallons each, and will be operated between Beaumont, Texas, and lower Mississippi river and Gulf ports. In the light of this failure, with apparently every condition favorable to the river grain route, how very like sophomore hifalutin sounds the statement of the St. Paul Pioneer-Press, that 'if the expenditure of $20,000,000 would deepen the channel so that grain barges drawing ten feet of water might make the trip from St. Louis to New Orleans, it would be the most profitable investment ever made by the government; that such an improvement of the river would make it possible to ship grain down the river for two and one-half cents per bushel, and by building up the Gulf route furnish a competing route to the sea that would make the toll gathering cities of Chicago and New York get down on their knees and beg for business. Now these cities dictate the freight rates, the tolls and everything else, but with the improvement of the river it would be the shippers in the great west who would dictate the terms.'

It must be as annoying to the cabinet transportation theorists that their fine spun theories so persistently work out wrong, as it is discouraging to the friends of the river as a competing line and arbiter of rates."

SPANISH WAR MEDALS.

THE NAVY DEPARTMENT has completed its compilation of the names of the officers and men who are to be decorated with the West Indian campaign medal. The list totals, in round numbers, 800 officers and about 6,000 enlisted men. Of this number the engagement at Santiago Bay, in which the greatest number of vessels took part, makes up the largest proportion. Admiral Schley and all the fleet officers and men will get medals, and the family of Admiral Sampson will be given the one intended for the deceased Admiral. A great many of these officers and men will have bars attached to their medals to show that they were also at Manzanillo, Nipe Bay, or other points selected by the board of awards as those at which an engagement worthy of a medal was fought. The meritorious service medal will go to persons who rendered exceptional service, like Blue, Ward, Hobson and Wainwright. The list of persons to whom this medal will be given is still under consideration by the board of awards.

DETROIT.

The steamer Thomas Adams will be launched at the yard of the Craig Ship Building Co., at Toledo this week.

It is estimated that the loss to marine interests on account of the "Soo" blockade will amount to from $80,000 to $100,000.

The title to the wrecking tug Wales was transferred from the Westcott Wrecking Co. to the Great Lakes Towing Co. at Ottawa Saturday.

Alterations on the Algoma Central Steamship Co.'s salt water side-wheel passenger steamer King Edward, have been completed and she has now been placed in service.

Capt. Phil Young, who last season sailed the steamer J. Emory Owen, is laid up with Bright's disease at his home here. His many friends and old shipmates will be pleased to learn that he is improving.

The old steamer Pastime, of Toledo, has been purchased by George E. Currie, to be used in connection with the old Greyhound for hauling dirt to fill in the river front near the water works, owned by Joseph Berry. The Pastime was built in Toledo in 1889, on very much the same lines as the Ohio river excursion steamers.

The international officers of the Longshoremen's Association, with headquarters in Detroit, are emphatic in their denial of the story from Chicago that they are interested in the movement to affiliate and bring under one head all the marine labor interests on the Great Lakes by organizing councils at all ports outside of their association.

George Hoerst, of Grand Rapids, who secured the contract to build the new life saving station at the Portage Lake canal, is to receive $9,900 for the work. There were several bids filed with the department, but this bid was by several hundred dollars the lowest. The materials for the station will be delivered at the site this week and the work started in a few days.

Capt. Thos. Meiklehan is master of the new White Star passenger steamer Greyhound, Winfield Dubois, chief engineer, James Kennedy, second engineer, B. Dagen, mate, Thomas Whalen, purser and Charles Campness, steward. General Manager Parker and Traffic Manager Beilman, are much pleased with the construction, equipment and performance of the handsome new boat.

The wreck of the Canadian schooner Gleniffer, sunk by the steamer Admiral, Capt. John Ivors, ten days ago, with loss of life, is still in the middle of the channel abreast the Star Island house. The two spars and the boom are above water. The burned hull of the steamer Kittie M. Forbes is in the mud just above the Star Island house, on the Canadian side, and but very little of her shows above the water. She is so far out of the way and so far out of the channel that the charred remains are not lighted.

The announcement is made by the Detroit & Cleveland Line that beginning June 20 the regular full summer service will be installed on Friday. The schedule this year includes the City of Alpena, leaving Detroit Mondays and Fridays, and the City of Mackinac, leaving Detroit on Wednesdays and Saturdays. With the exception of the double daily service between Detroit and Cleveland the full service of the D. & C. Line will have been installed with this change.

In last week's collision case in the river here it appears that the Frank E. Kirby, Capt. A. J. Fox, blew one whistle when the Wiley M. Egan, Capt. Fred Howe, was well up the river and was answered by two and the danger signal. The Kirby replied with two whistles repeated several times, but the Egan came straight for her. Both boats were backing when they struck. This minor collision looks like a case of too much whistling and too little attention to the right of way.

Charles Hebard, lumberman, died last week at Philadelphia, aged 71 years. Mr. Hebard was one of the most extensive lumber manufacturers in the United States having lumber camps at Pequaming, Mich., and elsewhere. Until he removed to Philadelphia from Michigan in 1889, he was a member of the board of regents of the Michigan university. Mr. Hebard was greatly interested in educational work and at the time of his death was a trustee of the Jefferson Medical College. Mr. Hebard was born in Lebanon, Conn., and was a direct descendant of Gov. Bradford.

BUFFALO.

The steamer Pennsylvania, of the Erie & Buffalo Line made her first excursion trip from Dunkirk to Buffalo on Tuesday. The boat will now run every Tuesday, Thursday and Saturday.

Miers Coryell, a well known consulting marine engineer died last week, aged 65 years. Mr. Coryell was for many years the representative of the Bellville boiler in this country. The last active position he held was that of superintending engineer of the Cromwell Line, New York.

Argument was heard in Admiralty court here on Tuesday by which the Gilchrist Transportation Co. seeks to recover $7,500 from the steamer City of Genoa. Several years ago the Gilchrist steamer Mecosta extinguished a fire on the Genoa and saved a cargo of grain, hence the claim for salvage.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Buffalo, for the week ending June 18. Prevailing wind direction for the week S.W.; highest velocity 48 miles, from the W. on the 13th; mean temperature for the week, 68°; highest temperature 78° on the 14th, lowest 53° on the 17th.

A warm welcome was given to the new steamer Western States, of the Detroit & Buffalo Line, which arrived here on her first trip from Detroit on Monday. The new boat is a sister ship to the Eastern States, which is now in service and is one of the finest passenger steamers on the lakes. A complimentary excursion and inspection was given Buffalo people.

Coal for local use is in fair supply, but there is nothing for shipment. There has not been a cargo shipped so far this month and it now looks as if June shipments would be easily counted. The coal docks have not been in such disuse for a decade or two and there is no telling when they will get busy again as the miners' strike seems no nearer a settlement now than it did a month ago.

Capt. Frank D. Welcome died at the Homeopathic hospital, where he had been for four days, for treatment for liver trouble. On Wednesday night last his body was taken to Port Huron, his former home, for burial. Capt. Welcome was well and favorably known among marine men, and few knew that he was ill. His widow is now at another hospital seriously ill. Capt. Welcome has not been sailing this season, but was slated to take command of a new boat of the Carter fleet, now building. Last season he sailed the Tampa.

The contract for removing the bowlders from the Erie basin, which have been a serious menace to navigation for many years, has been let by the canal department, to Capt. M. M. Drake, representing the Lake Erie Dredging Co., successor to the defunct firm of Hingston & Woods. Thousands of dollars have been expended by the Western Transit Co. alone for damages to vessels on account of these bowlders, yet they have been allowed to remain in the channel until now. The work will be done under an appropriation by the state of New York.

Not in years has the business of the Erie canal been so good as for the few months of the present season, and if lake conditions of trade in grain and package freight were in normal condition, it is very evident the season of 1902 would make a remarkable showing for the state ditch. The canal opened on April 24, and business since that time has been the best in three or four years. The canal men are getting good rates, in some instances nearly double those of recent years. There seems to be all the business that the boats are able to handle.

When the schooner Grampian, of the Davidson fleet, was towed to the ore docks by the Great Lakes tug Danforth, on Monday, the ore handlers made a protest and at first declared they would not unload her. The season agreement between the dock managers and the ore handlers signed last spring, however, contained a clause binding the latter not to engage in any sympathetic strike. After some argument the men consented to unload the Grampian's cargo. The impression prevails here in a certain circle, that the backbone of the tugmen's strike is broken and that the trust is gradually gaining ground.

W. G. Houck, of the Buffalo Structural Steel Co., has left here for Europe on a hunt for structural steel. "I do not know where I shall find it," said Mr. Houck, before starting, "but the American market is bare, and there is small prospect of finding the material in time for the completion of important contracts which our house has on its books unless I am able to secure it from abroad. The market for steel in this country shows no signs of being supplied. The furnaces and foundries do not overtake the demand, as was expected would be the case some time ago, and the consequence is a higher range of prices than is normal and a difficulty in finishing contracts on time, where steel is an important element in the work."

An Ogdensburg dispatch says: The swift current of the St. Lawrence river brought the steamer Minnewaska to grief, and the stern section of the big ship, constructed at Cleveland for service on the Atlantic, grounded on Toosaw Island on Monday, together with one of the tugs which had it in tow. The two sections of the Minnewaska entered the St. Lawrence river in tow of tugs which had brought them from Cleveland. For the river trip it was thought best to lash the sections together, but even this precaution proved unavailing. When the tugs and their tow tried to make the turn at the island the sections were wrenched apart. The stern section, containing the ship's valuable machinery, is reported in bad shape.

DULUTH-SUPERIOR.

Improvements and additional plant at the yards of the Superior branch of the American Ship Building Co. will be made at a cost of from $50,000 to $75,000.

The steel cargo steamer Sonora, 3914 gross and 2850 net tons, built at West Superior, and hailing from Duluth, has been granted official numbers by the Treasury Department, Washington.

Manager Wolvin of the Pittsburg Steamship Co. quiets rumors to the effect that no efforts is to be made to recover bodies of the nine sailors who were lost from the ill fated steamer Thomas Wilson. Preparations to send divers down are being made, and the search will be as thorough as possible.

It is now considered very probable that the Pittsburg Steamship Co. will make no attempt to raise the whaleback steamer Thomas Wilson, sunk by the steamer George G. Hadley, off Duluth harbor. No insurance is carried on the whaleback fleet. The Pittsburg Steamship Co., it appears, has only about a dozen vessels of its immense fleet insured.

It is reported that the new steamboat line between Duluth and Quebec, which was put in operation this spring, will shortly give orders for the construction of ten new steel vessels of a size which will allow them to pass through the canals on the route. The report comes from an apparently reliable source, but A. B. Wolvin, one of the principal owners of the line, could not be induced to discuss the matter.

For the third time the wreckers on the steamer Hadley were driven from their work on Tuesday through a strong northeaster. It is feared that the wind will again destroy the cofferdam being built to allow removal of the water from the sunken ship. Alexander Gibbs and Chas. M. Davis, of Milwaukee, who, with R. R. Sinclair, will estimate the value of the boat in her present condition in view of the legal proceedings to come later, arrived here but have not started on their duties.

The new Jones & Adams coal dock will begin to receive coal the first of next week, adding one more to the list of Superior coal docks. The new dock will be one of the best equipped at the head of the lakes, and an important addition to Superior's coal trade. The entire structure is complete. It is situated on St. Louis Bay outside the Philadelphia & Reading dock, making the fifth dock along that bay front. The new dock is modern in every part of its equipment. The boats are unloaded by three large Brown hoisting rigs, engine house, coal sheds, etc., have been built.

Corrigan, McKinney & Co., the largest independent producers of iron ore in the Lake Superior district, have decided to close their local office and transfer all work done in Duluth to Cleveland, where their main offices are located. A statement to this effect was made by Capt. George W. Wallace, former manager of the Corrigan, McKinney & Co. mines, who recently resigned. The step was decided upon for the reason that the company thought the business transacted by the Duluth office could be handled just as well at headquarters. The purchasing for all the mines, which was formerly done here, will now be done in Cleveland.

An interesting point which will be raised, according to E. C. Kremer, Esq., admiralty lawyer of Chicago, is whether Lake Superior is a portion of the "high seas" in the case of the Wilson-Hadley collision. If it is so held, under admiralty law, no action will lie for the death of the men drowned. Otherwise, their estates will have a right of action under the Minnesota law. This point was raised by Mr. Kremer in the case of Nickerson vs. Bigelow, where the steamer Robert Holland ran down the schooner W. H. Aldrich, in Lake Michigan, and the court held against him because Lake Michigan was wholly within the territory of the United States. Superior is an international body of water, and marine men will watch the decision on this point, if it comes to a decision, with a great deal of interest.

C. E. Kremer, Esq., of Chicago, attorney for the owners of the Hadley has filed a notice of "limited liability" in the United States District Court. This is under the act of March 26, 1851, under which the owner of a vessel inflicting damage is allowed to limit his liability to the amount of the value of the boat after the accident. This will limit the owners of the Hadley to the value of that boat as she now lies. This is done so that in case the Hadley is held responsible for the accident, the owners cannot be held for a sum exceeding her present value. The value of the Wilson and cargo and the damage which might be claimed for the lives of the drowned men, would make a very large sum. In filing the petition the owners of the Hadley specifically disclaim all responsibility for the accident. Judge Lochren, of Duluth, appointed as appraisers, Capt. Alexander Sinclair, Albert M. Gibbs and Charles M. Davis. The appraisers will inspect not only the hull, but the engines, boilers, equipment and every part of the boat, including the cargo.

CHICAGO.

Capt. Fred C. Hart, who sailed the steamer Hadley last season, has been given command of the Davidson steamer Shenandoah.

Capt. Allan McIntyre, of the steamer Manitou, has arranged a hood, screen, or as he calls it, a visor for the electric search light. The visor keeps the reflection of the light from showing anywhere on the decks of the steamer and is thought to be quite an improvement.

The Shipowners' Drydock Co. converted the Australia from a tow barge to a steamer during the past winter. On the trial trip last Saturday the machinery of the vessel worked perfectly and a speed of ten miles an hour was reached. The Australia is owned by Capt. James Corrigan, Cleveland.

The Sir Thomas Lipton Cup has arrived in Chicago and been turned over by the custom house authorities to the officers of the Columbia Yacht Club. The trophy, which is to remain in the possession of the club for contests on July 4, 5 and 7, is a beautiful specimen of work, and valued at $730.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Chicago. for the week ending June 18. Prevailing wind direction for the week N.E.; highest velocity 42 miles, from the N.W. on the 12th; mean temperature for the week, 68°; highest temperature, 91° on the 12th; lowest, 51° on the 11th.

All of the owners of the independent tugs here have agreed to adopt a twelve-hour day for their captains and engineers at the same scale of wages that they have heretofore received. Business Agent Dalton says that four additional tugs are to be brought here soon, provided the present owners and the new-comers will agree to pool on towing and thus avoid possible dissensions in the competition for business.

Capt. Donald McLean, of this city, is the designer of an engine room signal or telegraph for which superior claims are made. It is understood that the Graham & Morton Line will be fitted out with the new appliance. Satisfactory tests have been made during the past six weeks on the steamer Puritan, and Capt. Boswell has no hesitation in saying that it is practical, effective and invaluable for service in Chicago river, and as things go now, including the strong current experienced at times, there is no better place on the lakes to test an invention of this sort.

The tug Shields, owned by Capt. Louis Hohman, presiding officer of the L. T. P. A., had her upper works wrecked and smokestack laid low by coal passers at the Peabody docks. It was thought that she had a non-union crew on board as she had no "union crew" burgee in sight. There are now seven tugs in service. The others are the James Hay, also belonging to President Hohman; the Bradwell and John F. May, owned by Judge Bradwell; the Success and Tom Brown, of the Harmon fleet, and the Robbie Dunham, of the Howard Transportation Co.

City bridges will not last another month if the tugmen's strike is continued for that length of time, according to Harbor Engineer Burke. Vessels, unable to secure tugs, and having to move under their own steam, are crashing into the bridges and sending large slices to the bottom of the river almost daily. In April Colonel Burke found that there had been more collisions of vessels with bridges than ever before, and his record for April and May shows sixty-eight accidents. In previous years the collisions usually averaged fifteen a month during the navigation season. Colonel Burke would like to call off the tugmen's strike in order to save the bridges, but his efforts in this direction have met with failure.

Vessel owners and representatives of vessel property trading here were in conference with the city council committee on harbors, viaducts, and bridges on Monday, for the purpose of drawing up an ordinance establishing rules etc., for navigation of the Chicago river. Attorney Chas. E. Kremer, Esq., represented the vessel interests. City Engineer Ericson and Harbor Engineer Burke were present for the city, and General Ernst represented the government engineer's office. Among the important revisions made by the vesselmen were rules providing large red lights on the bridges at night and the red ball, now in vogue, for day use. In the latter instance it was so arranged that the bridge tender will be kept more closely to his duties, a point on which vesselmen have long been given reason to complain.

The pool of the lumber tonnage on the lakes to control the rates of freight has been in operation long enough to assure owners that it will not be broken. Boats are still being withdrawn from the lumber trade, although the necessity for such action is not so urgent now as it was two weeks ago, the supply of boats in the trade being now about equal to the demand. The new cut is drying on the docks in the upper lake region. While there is a slightly increased call for tonnage, the trade is not expected to improve sufficiently to draw the boats out of ordinary much before July 1. After that date, the movement of lumber will be heavy, so that if the rates are not broken before that time it looks like a season of sustained freights, even if it is obtained by the temporary laying up of a certain portion of the fleet.

CLEVELAND.

Mr. L. M. Bowers, who represents John D. Rockefeller on the lakes, was in the city yesterday.

A meeting of the directors of the American Ship Building Co. was held here on Wednesday. Only outline business was transacted.

A meeting of the executive board of the Great Lakes Towing Co. was held here on Wednesday afternoon. President Newman said that no business of importance was transacted.

The steel cargo steamer, J. M. Jenks, 4644 gross and 3381 net tons, built at Lorain and hailing from Cleveland, has been granted official numbers by the Treasury Department, Washington.

The bridge rules for Cuyahoga river are not yet in force, although meeting with considerable approval. It is likely that the matter will be again taken up on the settlement of the tug strike.

No obstruction has been found by the U. S. Engineers survey party between Fairport and Ashtabula as reported by several vessels. Evidently no reliable bearings were taken in the locality by the captains of the boats after striking bottom.

The tug strike situation has not changed. There is every prospect of settlement soon on terms that are agreeable to both sides of the controversy, and the hope is being cherished that nothing will intervene to affect the results in the least. The negotiations are of such a nature that it may take a week or ten days to bring something definite out of the prevailing conditions.

The twin screw steamer North West, which was due here from Buffalo, on Wednesday morning at 8:30, did not get in until 7 o'clock at night. The delay was caused by her boilers not working right. She left for Chicago at 9 o'clock. The boilers on the two big Northern boats were changed during the winter. The Belleville water tube boilers were taken out and replaced by Scotch boilers.

Major Dan C. Kingman, Corps of Engineers, U. S. A., in charge of the conservancy and improvement of rivers and harbors within this district, will shortly advertise for bids for the work to be done at the several adjoining ports. It is known that the necessary delay in placing contracts will permit of a good deal of fine weather to pass over, but every possible advantage will be taken of the balance of the season and an early start next spring.

Mr. Norman B. Conger, Inspector U. S. Weather Bureau and marine agent, stationed at Detroit, is visiting this port on the usual inspection tour, he reports the local station in excellent order, and compliments Mr. Kenealy on the superior average of Cleveland's weather predictions. Mr. Conger reached here on Wednesday and will likely remain till towards the end of the week, among other duties he will call upon vessel owners and managers of lake fleets.

Work on the railroad car ferry, particulars of which was given last week, will be started as soon as the material for her construction is at the shipyards and a large force of men will be kept busy on her until she is completed. Her cost is estimated at $400,000. Work on the Pere Marquette 18 is being rushed and she will be ready for service next October. Mr. Robert Logan, of this city, designed the Pere Marquette and he is superintending her construction in the interests of her owners.

The local inspectors of steamboats find it decidedly uncertain when they will be able to hear the complaints against the tugmen concerning the alleged formation of a conspiracy to injure commerce. They say that the boats which need to be inspected are coming in almost daily and it is necessary to handle them while in port. The activity along this line is depriving the inspectors of any time in which to hear the complaints against the men. Judge Wing, of the United States District Court will also rule upon their authority for the wholesale cancellation of licenses.

The men yesterday, through O. C. Pinney, Esq., their counsel, presented to Judge Wing, of the United States District Court, their case for an injunction to restrain the inspectors from hearing the cases against the tug men for violating the laws under which they hold their licenses. In this action the constitutionality of the law under which the men hold their licenses was questioned. Judge Wing did not give his decision in the case but has taken the matter under advisement and will make his ruling in a short time. The men were providing against a possible determination of the inspectors to presently conduct a hearing and bring them to trial.

The announcement is made by the Cleveland & Toledo Line that daily service between this port and the islands will be resumed next Thursday. This order carries with it also the double daily service between Cleveland and Toledo, as the boats meet at Put-in-Bay.

The Detroit & Cleveland Navigation Co. now handles the two boats on the Georgian Bay route. The Pittsburg took, besides a good load of freight, a large list of passengers for this time of the year. The City of the Straits will be over here next Thursday and will make her first trip up the lakes. After that it will be a regular semi-weekly schedule until well along in the fall and the excursion season is over.

William R. Fitch, who was appointed by City Treasurer Mr. H. D. Coffinberry Monday to succeed W. R. Kissick, as second assistant in his office, is a well known citizen of Cleveland. For ten years he was secretary of the Cleveland Ship Building Co., and upon the formation of the American Ship Building Co., he became its auditor. He retained that position until he sustained severe injuries in a street railway accident, which necessitated his retirement from business for some time. Mr. Fitch is well and favorably known in lake marine circles. He is an upright and conscientious citizen with a host of friends, and, as an able financier, will be of invaluable assistance to his former and present chief. Mr. Fitch was secretary and treasurer when Mr. Coffinberry was president of the Cleveland Ship Building Co.

Lieutenant Commander Wirt, Ohio Naval Reserves, returned on Monday from Baltimore, Md., where he attended the meeting of the National Association of Naval Militia of the United States. Thirty or forty delegates were in attendance. The association recommended the encouragement and building up of the naval militia. The association also recommended the naval bill now before Congress, which, if passed, will make the naval militia subject to the call of the President in time of war. The bill also authorizes the Secretary of War to loan United States ships to the naval militia for training purposes. The Toledo battalion of the Ohio Naval Reserves have been defeated in their effort to obtain temporary possession of the Hawk for annual training purposes. Recently Governor Nash received a request from Lieutenant Commander Welbon, of the Toledo battalion of the Naval reserves, for the use of the Hawk from the latter part of the navigable season of 1902 to the end of the first half of the season of 1903. Governor Nash referred the requisition to Lieutenant Commander Wirt, of the Cleveland Battalion. The requisition has apparently been shelved by Lieutenant Commander Wirt, as he claims that to give the Hawk to the Toledo battalion would be a violation of the international agreement entered into between the United States and Great Britain, in which it was stipulated that the boat was for the use of the Cleveland battalion.

LUMBER RATES, RAILROAD—LAKES.

Since the railroads have ordered reductions in freight rates on lumber from Duluth to Chicago, vessel interests have been doing considerable figuring, and the unanimous conclusion is that cuts made by the rail lines will not affect the $2.50 per 1,000 feet lake rate which vessel men have worked so hard to maintain.

On a basis of 8 cents per 100 pounds the rail rate now quoted on Lake Superior lumber, the average white pine, vesselmen say, will run about 2,700 pounds to 1,000 feet, or $2.16 per 1,000.

This is 34 cents less than the lake rate, but the shippers must pay in the neighborhood of 50 cents per 1,000 for loading the material, and about 10 cents for unloading at destination with his yard help.

In addition, there is a charge of $2 per car for switching, which the shippers must also stand. The lake rate includes both loading and unloading charges.

Vesselmen say there is further disadvantage of shipping by rail. Much of the lumber cut now is a large per cent. Norway pine, which weighs heavily, some running up to 3,000 pounds per 1,000 feet, and this will increase the rail rate materially.

Even if the rail rates were anywhere near equal, it is said the lake carriers ought to get the business. When lumber is ready to ship it must be sent forward rapidly to make room on the docks for new piles, and the railroads have not the facilities to handle it.

This is shown in the fact that average Lake Superior cargoes of lumber are more than 600,000 feet, which is equivalent to about fifty car loads. The railroads, according to these figures, would be badly rushed in taking away six to a dozen such cargoes a day, an amount in the aggregate frequently handled from the various ports.

The railroad lines get a good business in "shorts" and upper grade lumber, and a liberal amount of straight pine, but to say the lower rates will detract from the lake shipments appears to be all wrong.

BEESON'S MARINE DIRECTORY.

The 15th annual edition of Beeson's Marine Directory of the North-Western Lakes for 1902, has just been issued, and is doubtless in the hands of subscribers at this date.

The work is in its usual excellent form, and contains 258 pages of valuable statistical matter. The list of iron ore carriers, giving the average cargo and the draft of water of the vessels is one of the new features. The names and tonnage of Canadian steam and sailing vessels is voluminous and complete, and the record of engines and boilers in service on the lakes craft has been brought up to date, as also the lists of names, places of business, etc., of all lake vessel owners.

Another noteworthy feature to the pages of the Directory is a collaboration of cases and judicial decisions, digests of maritime law occupying twelve pages and arranged under the respective headings to which the decisions relate.

It is the general opinion that Beeson's Marine Directory increases in the value of its contents each year, and that it is now found necessary to have a copy of the latest issue conveniently at hand in the offices of those who are interested in any way in the lake marine.

SUNRISE AND SUNSET.

By this table the apparent time of the sun's rising and setting, and the length of the day and night, may be determined.

SUN'S DECLINATION.

LAT.	0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	LAT.
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	°
0	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	0
5	6 00	6 01	6 01	6 02	6 03	6 04	6 04	6 05	6 06	6 07	6 07	6 08	6 09	5
10	6 00	6 01	6 03	6 04	6 06	6 07	6 09	6 10	6 12	6 13	6 15	6 16	6 18	10
15	6 00	6 02	6 04	6 06	6 09	6 11	6 13	6 15	6 18	6 20	6 22	6 25	6 27	15
20	6 00	6 03	6 06	6 09	6 12	6 15	6 18	6 21	6 24	6 27	6 30	6 34	6 37	20
25	6 00	6 04	6 07	6 11	6 15	6 19	6 23	6 27	6 31	6 35	6 39	6 43	6 48	25
30	6 00	6 05	6 09	6 14	6 19	6 23	6 28	6 33	6 38	6 43	6 49	6 54	7 00	30
35	6 00	6 06	6 11	6 17	6 23	6 28	6 34	6 40	6 46	6 53	6 59	7 06	7 13	35
40	6 00	6 07	6 13	6 20	6 27	6 34	6 41	6 48	6 56	7 03	7 11	7 19	7 28	40
45	6 00	6 08	6 16	6 24	6 32	6 41	6 49	6 58	7 07	7 16	7 25	7 35	7 46	45
50	6 00	6 10	6 19	6 29	6 39	6 49	6 59	7 09	7 20	7 31	7 43	7 55	8 08	50
55	6 00	6 11	6 23	6 35	6 46	6 58	7 11	7 23	7 37	7 51	8 05	8 21	8 38	55
60	6 00	6 14	6 28	6 42	6 56	7 11	7 26	7 42	7 59	8 17	8 36	8 58	9 22	60
65	6 00	6 17	6 34	6 52	7 10	7 29	7 48	8 09	8 32	8 57	9 25	10 00	10 51	65
70	6 00	6 22	6 44	7 07	7 31	7 56	8 23	8 53	9 28	10 13	12 00			70

When the latitude and declination are of same name, the table gives the apparent time of sunset. To find the time of sunrise, subtract the time of setting from 12h 00m.

When the latitude and declination are of different name, the table gives the apparent time of sunrise. To find the time of sunset, subtract the time of rising from 12h 00m.

Double the time of sunset will give the length of the day.

Double the time of sunrise will give the length of the night.

Interpolate for degrees not given in the table.

WILSON-HADLEY COLLISION.

BOTH MASTERS HELD AT FAULT—LICENSES DEALT WITH—ONE CANCELLED.

Disobedience of rules by the masters of both the George C. Hadley and the Thomas Wilson was responsible for the collision which resulted in the sinking of the two steamers, and the loss of nine lives last Saturday morning, according to the decision of the United States inspectors, which was filed yesterday afternoon.

Capt. Michael Fitzgerald, of the Hadley, suffered the revoking of his license, while Capt. M. C. Cameron, of the Wilson, is suspended for sixty days.

The inspectors say that the movement of the Hadley, in changing her course was "not authorized by any rule," but at the same time they declare that the captain of the Wilson, under those circumstances was bound by Rule III., of the Pilot Rules, to slow down and blow a warning signal of five or more short blasts of his vessel's whistle, which he failed to do.

The rules which both masters failed to comply with are Rules I. and V., regarding passing signals when vessels are approaching each other "head and head." or nearly so, which the inspectors declare was the case with the Hadley and the Wilson.

It is evident that the inspectors' report places prime blame for the accident upon Capt. Fitzgerald, of the Hadley, although they also hold Capt. Cameron, of the Wilson, partly responsible, because he failed to take the precautions to avoid the collision, which the rules direct shall be taken, under such circumstances.

Attorney H. R. Spencer, who represents the owners of the Wilson, said last night that the decision of the United States inspectors would have no bearing whatever upon the legal aspect of the case.

THE INSPECTOR'S REPORT.

The report of the inspectors is given herewith in full:

In compliance with section 4450, Revised Statutes, we have investigated the case of a collision between the steamers George G. Hadley and Thomas Wilson, which resulted in the sinking of both vessels and drowning of nine men, all of whom were members of the crew of the steamer Wilson.

In the report of the master of the steamer Thomas Wilson it appears that she was loaded with ore, and on the usual course of vessels bound down the lake; that the Hadley was bound for Duluth, on a course so far to the northward of the Wilson's course that no passing signals were given, and they were about to pass port to port, when suddenly, without any signal or warning, the Hadley swung sharply to port toward the Wilson's course, as though under a hard starboard helm. The Wilson's wheel was thrown aport, which was the only way of avoiding a collision, and the Wilson swung away from the Hadley, but the Hadley continued her sheer to port, and struck the Wilson heavily on the latter's port side, just forward of the after hatch.

Just before the collision the Hadley blew a signal of two blasts of her whistle, but it was too late to do anything in response to this. The Wilson sank at once in twelve fathoms of water, carrying down and drowning nine of her crew. The collision occurred at about half past ten o'clock in the forenoon of June 7, 1902. The weather was perfectly clear, with a light breeze from the northward.

In the report of the steamer George G. Hadley it appears that the vessel was loaded with coal and bound for Duluth; that at a little after ten o'clock a. m., on June 7, 1902, the Hadley collided with and sunk the steamer Thomas Wilson, about three-quarters of a mile from the Duluth channel piers, the Wilson immediately sank, having been struck by the Hadley on her port side, stem on. Nine of the crew of the Wilson are reported drowned. Before the collision the Wilson was bound out of the Duluth piers, while the Hadley was bound in. While headed substantially for each other, the Hadley's helm was starboarded and a signal of two blasts was blown to the Wilson. Receiving no answer to this, the Hadley was immediately stopped and backed, hoping to swing clear of the Wilson, but the latter ported her helm and swung directly across the course of the Hadley, and the collision was the result. The Hadley rendered all the assistance in her power to the crew of the Wilson. After everybody had either been saved or had disappeared, the Hadley was run for the shore, and succeeded in reaching the beach just south of the harbor piers at Duluth, where she went down in twenty feet of water. None of the crew of the Hadley were injured.

NO PASSING SIGNALS.

The evidence shows that when the steamer Thomas Wilson was passing through the Duluth canal the George G. Hadley could be plainly seen, about two miles away, a little on the port bow of the Wilson, and that each vessel continued running in their relative positions until they were within about a quarter of a mile of each other, and that no passing signals had been given by either vessel. The vessels would then be considered as approaching each other head and head, or nearly so, and each should have complied with the requirements of rules I. and V. of the Pilot Rules, which are as follows:

"When steamers are approaching each other 'head and head,' or nearly so, it shall be the duty of each steamer to pass to the right, or port, side of the other; and the pilot of either steamer may be first in determining to pursue this course, and thereupon shall give, as a signal of his intention, one short and distinct blast of his whistle, which the pilot of the other steamer shall answer promptly by a similar blast of his whistle, and thereupon such steamers shall pass to the right, or port, side of each other. But if the course of such steamers is so far on the starboard of each other as not to be considered by pilots as meeting 'head and head,' or nearly so, the pilot so first deciding shall immediately give two short and distinct blasts of his whistle, which the pilot of the other steamer shall answer promptly by two similar blasts of his whistle, and they shall pass to the left or on the starboard side of each other. * * *

Rule V. "The signals, by the blowing of the whistle, shall be given and answered by pilots, in compliance with these rules, not only when meeting 'head and head,' or nearly so, but at all times when passing or meeting at a distance within a half mile of each other, and whether passing to the starboard or port."

Both steamers failed to observe these rules, and are equally at fault for not doing so.

The Hadley starboarded her wheel when the vessels were in said position, and they were then too near together for the Wilson to avoid a collision, which movement is not authorized by any rule. It was the duty of the Wilson to have complied with the requirements of Rule III. of the Pilot Rules when the Hadley changed her course, instead of continuing at full speed until the collision occurred, which fact is shown by the evidence. Rule III. of the Pilot Rules is as ffollows:

"If, when vessels are approaching each other, the pilot of either vessel fails to understand the course or intention of the other, whether from signals being given or answered erroneously, or from other causes, the pilot so in doubt shall immediately signify the same by giving several (five or more) short and rapid blasts of the whistle; and if the vessels shall have approached within half a mile of each other, both shall immediately be slowed to a speed barely sufficient for steerageway until the proper signals are given, answered, and understood, or until the other vessels have passed each other.

"Vessels approaching each other from opposite directions are forbidden to use what has become technically known among pilots as 'cross signals'—that is, answering one whistle with two and answering two whistles with one. In all cases, and under all circumstances, a pilot receiving either of the whistle signals provided in the rules, which for any reason he deems it injudicious to comply with, instead of answering it with a cross signal, must at once observe the provisions of this rule."

For failing to observe the rules mentioned, the license of Michael Fitzgerald, as master and pilot, is hereby revoked, and that of M. C. Cameron, master and pilot, is suspended for sixty days.

HYDROGRAPHIC OFFICE NOTES.

On Lakes Michigan and Huron, fog forms and dissolves under many different atmospheric conditions, the controlling factors not being so well understood as on Lake Superior. On Lake Michigan, the most fog is reported in mid-lake on the course from the Manitous to Milwaukee. During the summer months, fog forms out a short distance from the shore during early morning and dissolves later. These banks are usually of small dimensions, but quite heavy and thick. There is not much fog reported from southern Lake Michigan. The low areas of summer do not generally extend south over these lakes, and fog does not form so often as on Lake Superior. The early morning land and lake breezes often cause the fog banks to form, sometimes, as low-lying fog, and, at other times, as heavy, dense banks with frequent openings of clear weather. In the fall of the year, with low areas moving in from the southwest, the blanket form of fog appears, and may last for one, two, or three days, with only an occasional clearing. These conditions sometimes obtain in the spring also, but less frequently. On the average, there are two of these prolonged fog banks each fall, although there was none last fall.

Whenever it is foggy on Lake Huron, off the entrance to Detour Passage and the St. Mary's river, with clear weather inside, the fog signal at Detour light station will sound alternate blasts of 8 and 3 seconds' duration, separated by alternate silent intervals of 2 and 47 seconds, thus: Blast, 8 seconds silent interval, 2 seconds; blast, 3 seconds; silent interval, 47 seconds.

Chicago river is spanned by 54 bridges, and there are three tunnels under it—at La Salle, Washington, and Van Buren streets, respectively—having navigable depths of from 16 to 18 feet of water over their crowns at deepest points. The main river and its branches have been dredged to 17 feet and carry that depth from Rush street bridge to the stock yards in the south branch, and to Belmont avenue in the north branch (the respective heads of navigation), except where shoaling has taken place. The Chicago Sanitary district has dredged the greater portion of the south branch between Lake street and the west fork to depths varying between 20 and 26 feet. The obstructive bends in the river have all, as far as authorized in 1899 been removed. All the depths given are below city datum. The river deteriorates from sewage as well as from slush in connecting slips.

Chicago Sanitary and Ship Canal.—Distance from mouth of Chicago river to junction of main channel of canal with west fork of south branch of Chicago river at Robey street, about 5 2/10 (6) miles. Length of main channel, Robey street to controlling works at Lockport, 24 3/10 (28.05) miles. Dimensions: Robey street to Summit 7 (7.8) miles, 110 feet wide at bottom, 198 feet wide at water line, with minimum depth of water, 22 feet. Summit to Willow Springs, 4 4/10 (5.3) miles, 202 feet wide at bottom, 290 feet wide at water line, with 22 feet depth of water; at Willow Springs the channel narrows to the walled and rock cross section 160 feet wide at bottom, 162 feet wide at top.

The Illinois Steel Co.'s private harbor (3,000 feet north of Calumet harbor) is practicable at low water for vessels drawing 18.5 feet. It is the aim of the company to maintain 20 feet depth of water in the slips and river and 21 feet in the exposed channel. Their north slip is 200 feet wide, contracted at the mouth to 100 feet in width to prevent internal disturbance.

Chicago to the Mississippi River by way of the Illinois and Michigan Canal and the Illinois River.—Distance, 282 (325) miles (from Lake Michigan), 4 3/10 (5) miles in the Chicago river, 84 (97) miles in the Illinois and Michigan canal, and 193 (223) miles in the Illinois river from Lasalle to mouth. The Illinois and Michigan canal commences on the south branch of the Chicago river, 4 3/10 (5) miles from Lake Michigan. There are 15 lift locks and one guard lock. The canal was intended to be 60 feet wide at the water surface, 48 feet wide at the bottom, with locks 110 feet long, 18 feet wide, and having a depth of 6 feet on the miter sills. There are four locks in the Illinois river between Lasalle and the Mississippi, each 350 feet long, 75 feet wide, with 7 feet depth on the miter sills. The first two below Lasalle (one at Henry, 170 (196) miles above the mouth, and one at Copperas creek, 119 (137) miles above the mouth, are operated by the state of Illinois, and tolls are collected. The other two (one at Lagrange, 69 (79) miles above the mouth, and one at Kampsville, 27 (31) miles above the mouth, are operated by the United States.

OFFICERS ON DUTY UNDER THE LIGHT-HOUSE ESTABLISHMENT.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., June 7, 1902.

The following is a list of the officers on duty under the Light-House Establishment on this date, with the residence or postoffice address of each:

MEMBERS OF THE LIGHT-HOUSE BOARD.

Hon. Leslie M. Shaw, Secretary of the Treasury, and *ex officio* President of the Board, Treasury Department, Washington, D. C.

Rear-Admiral George C. Remey, U. S. N., Chairman, 1212 21st street N.W., Washington, D. C.

Col. Walter S. Franklin, 24 East Vernon Place, Baltimore, Md.

Col. Alexander Mackenzie, Corps of Engineers, U. S. A., War Department, Washington, D. C.

Dr. Henry S. Prichett, Institute of Technology, Boston, Mass.

Capt. Benjamin P. Lamberton, U. S. N., 1319 N street N.W., Washington, D. C.

Col. Peter C. Hains, Corps of Engineers, U. S. A., 812 St. Paul street, Baltimore, Md.

Cant. Washburn Maynard, U. S. N., Naval Secretary, The Portner, 15th and U streets, N.W., Washington, D. C.

Maj. Daniel W. Lockwood, Corps of Engineers, U. S. A., Engineer Secretary, The Portner, 15th and U streets, N.W., Washington, D. C.

INSPECTORS.

1st. Dist.—Commander Greenlief A. Merriam, U. S. N., Custom House, Portland, Me.

2d.—Commander Arthur P. Nazro, U. S. N., Post-Office Building, Boston, Mass.

3d.—Capt. William M. Folger, U. S. N., Tompkinsville, N. Y.

4th.—Commander John Hubbard, U. S. N., Post-Office Building, Philadelphia, Pa.

5th.—Commander John M. Hawley, U. S. N., Merchant's Bank Building, Baltimore, Md.

6th.—Commander Wells L. Field, U. S. N., Old Post-Office Building, Charleston, S. C.

7th.—Commander James H. Bull, U. S. N., Custom House, Key West, Fla.

8th.—Commander Kossuth Niles, U. S. N., Custom House, New Orleans, La.

9th.—Commander Lucien Young, U. S. N., Marquette Building, corner Adams and Dearborn streets, Chicago, Ill.

10th.—Commander Andrew Dunlap, U. S. N., Federal Building, Buffalo, N. Y.

11th.—Commander Edward H. Gheen, U. S. N., U. S. Public Building, Detroit, Mich.

12th.—Commander John B. Milton, U. S. N., Safe Deposit Building, San Francisco, Cal.

13th.—Commander William P. Day, U. S. N., Custom House, Portland, Oreg.

14th.—Commander William H. Turner, U. S. N., Post-Office Building, Cincinnati, O.

15th.—Commander William A. Marshall, U. S. N., New Custom House, St. Louis, Mo.

16th.—Commander Albert C. Dillingham, U. S. N., Custom House, Memphis, Tenn.

ENGINEERS.

1st District.—Lieut. Col. William S. Stanton, U. S. A. 25 Pemberton Square, Boston, Mass.

2d.—Lieut. Col. William S. Stanton, U. S. A., 25 Pemberton Square, Boston, Mass

3d.—Maj. William T. Rossell, U. S. A., Tompkinsville, N. Y.

4th.—Lieut. Col. William A. Jones, U. S. A., Post-Office Building, Philadelphia, Pa.

5th.—Lieut. Col. William A. Jones, U. S. A., Post-Office Building, Baltimore, Md.

6th.—Capt. James C. Sanford, U. S. A., Custom House, Charleston, S. C.

7th.—Lieut. Col. Andrew N. Damrell, U. S. A., Mobile, Ala.

8th.—Lieut. Col. Andrew N. Damrell, U. S. A., Mobile, Ala.

9th.—Maj. James G. Warren, U. S. A., Custom House, Milwaukee, Wis.

10th.—Maj. Thomas W. Symons, U. S. A., Federal Building, Buffalo, N. Y.

11th.—Capt. Lansing H. Beach, U. S. A., Old Custom House, Detroit, Mich.

12th.—Lieut. Col. Thomas H. Handbury, U. S. A., Flood Building, San Francisco, Cal.

13th.—Capt. William C. Langfitt, U. S. A., Oregonian Building, Portland, Oreg.

14th.—Col. Garrett J. Lydecker, U. S. A., Custom House, Cincinnati, Ohio.

15th.—Col. Amos Stickney, U. S. A., 1515 Locust street, St. Louis, Mo.

16th.—Capt. Charles L. Potter, U. S. A., Memphis, Tenn.

GEORGE C. REMEY,
WASHBURN MAYNARD, Rear-Admiral, U. S. N., Chairman.
Captain, U. S. N., Naval Secretary.
DANIEL W. LOCKWOOD,
Major, Corps of Engineers, U. S. A., Engineer Secretary.

Admiralty—Priority of Liens.—An admiralty lien for towage is inferior to any statutory lien for repairs, the towage having been performed more than six months before, without effort to collect therefor till after the repairs. The Sleepy Hollow, 114 Fed. Rep. (U. S.) 367.

THE RAPID GROWTH OF THE PINTSCH LIGHT SYSTEM.

An interesting statement has been issued by the Safety Car Heating & Lighting Co., showing the remarkable increase in the use of the Pintsch Light System during the past twelve months, as well as giving the total number of cars, locomotives, buoys and beacons equipped with this system throughout the world. Upon reference to the table we find that there are at present in the United States and Canada, 18,653 cars equipped with the Pintsch system of lighting, while in the territory controlled by the American company, there are sixty-six Pintsch gas manufacturing plants in operation. The complete statement appears below.

STATEMENT OF CARS, LOCOMOTIVES, BUOYS, ETC., USING THE PINTSCH SYSTEM OF LIGHTING TO MAY, 1902.

	Cars.	Locomotives.	Gas Works.	Buoys & Beacons.
Germany	40,156	4,786	71	124
Denmark	45		3	21
England	18,859	18	87	272
France	6,741		27	240
Holland	3,487	5	10	86
Italy	1,528		5	15
Switzerland	380	2	1	1
Austria	4,218		10	
Russia	3,041	112	13	13
Sweden	679	43	4	2
Servia	216			
Bulgaria	98		1	
Turkey	114			
Egypt	42		3	118
Canada	166		3	65
Brazil	974		1	33
Argentine	1,096	31	10	2
Chili	46		2	38
India	9,584		16	172
Australia	2,053		13	4
United States	18,497		63	15
Japan	100		2	
China			1	
Mexico	81		1	
Total	112,191	4,997	347	1,211
Increase for the year	6,527	525	11	49

NEW DOCKAGE FOR BUFFALO.

The Sparrow-Kroll Lumber Co., of Kenton, has received a contract for 7,000 pieces of Norway piling to be delivered at Buffalo. This means the largest single piling contract awarded in the upper peninsula in years. The piling is to be used in the construction of a foundation for a large steel plant.

The magnitude of this deal can be realized when it is stated that the freight on the shipment will amount to several thousand dollars. The piling is being gotten out along the Sparrow-Kroll logging road and is from 45 to 75 feet in length. The order already has been one-half filled.

The Sparrow-Kroll Lumber Co. is one of the few in the upper peninsula or Wisconsin which is in a position to furnish Norway piling. There is a lumber company at Tomahawk, Wis., which gets some of it out, but not in such large quantities. The Kenton lumber company has tracts of land from which this piling can be gotten out and it has the facilities for handling it cheaply. A big order for piling for the St. Paul road was recently filled.

LATEST MARINE PATENTS.

701,927.—Binnacle-Compass. John Paoli, Hoboken, N. J., assignor to the Keuffel & Esser Co., a corporation of New Jersey.

702,029.—Apparatus for unloading scows, etc. Theodore P. Patne, Irvington, N. J.

702,129.—Controller for Propellers. William Cooper, Denver, Colo.

STATEMENT OF THE VISIBLE SUPPLY OF GRAIN

As compiled by George F. Stone, Secretary Chicago Board of Trade Saturday, June 14, 1902.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels
Buffalo	849,000	387,000	319,000	32,000	194,000
Chicago	3,474,000	2,430,000	410,000	209,000	.....
Detroit	154,000	3,000	4,000	10,000	.....
Duluth	5,433,000	52,000	5,000	7,000	54,000
Fort William, Ont.	1,464,000	.....	.....	.....	.....
Milwaukee	61,000	108,000	165,000	5,000	15,000
Port Arthur, Ont.	100,000	.....	.....	.....	.....
Toledo	22,000	226,000	130,000	53,000	1,000
Toronto	7,000	.....	6,000	.....	1,000
On Canals	581,000	77,000	194,000	.....	20,000
On Lakes	1,074,000	572,000	304,000	144,000	.....
Grand Total	23,570,000	4,719,000	2,444,000	554,000	346,000
Corresponding Date, 1901	35,130,000	17,271,000	10,832,000	616,000	546,000
Increase for week	.....	458,000	.....	.....	.....
Decrease " "	2,521,000	.....	39,000	145,000	60,000

While the stock of grain at lake ports only is here given, the total shows the figure for the entire country except the Pacific Slope.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED ESPECIALLY FOR THE MARINE RECORD).

Collision—Overtaking Vessel—Duty to Give Signals.—It is the duty of an overtaking vessel to see to it that she does not come so near the overtaken vessel as to cause danger of collision; and, if she does come within the line of danger, it is her duty to warn the other vessel by signals, whether she intends to pass or not. The Fleetwing, 114 Fed. Rep. (U. S.) 409.

Duty of Tug with Tow—Navigating Channel.—While a tug with a tow has the right of way over an unencumbered vessel, it has no right to unduly or unnecessarily obstruct the pathway of other vessels, and in navigating a channel known to be constantly used by other vessels it is its duty to take all proper and reasonable measures to have its tow under control, and to lessen the danger of collisions. The Jamestown, 114 Fed. Rep. (U. S.) 593.

Collision—Steamship and Tug with Tow—Presumption of Fault.—A tug with a vessel in tow occupies the position of an encumbered vessel, and it is the duty of a steamship approaching it, unencumbered, to keep out of the way. Its action, under any circumstances, should be on the safe side, taking no chance of collision which can be avoided, and it will be presumed to have been in fault for a collision unless fault of the tug or tow is shown. The Jamestown, 114 Fed. Rep. (U. S.) 593.

Objections to Computation by Commissioner—Waiver—Practice on a hearing before a commissioner in admiralty is analogous to that before a master in chancery, and objections to computations made by the commissioner should be taken by exception to this report, and, if not so taken, or at least urged on the hearing before the court on such report, they will be treated as waived, and will not be considered when raised for the first time by assignments of error in the Appellate Court. The Eliza Lines, 114 Fed. Rep. (U. S.) 307.

Towage—Validity of Contract—Services in the Nature of a Salvage.—An agreement fixing the price to be paid for towing a vessel into port will not be set aside as exorbitant, although the price is considerably in excess of customary towage rates, where, owing to the perilous situation of the tow, which was unable to make headway against the seas, and the fact that there was no other tug in the vicinity which could have rendered assistance, the service was in the nature of a salvage. The Atkins Hughes, 114 Fed. Rep. (U. S.) 410.

Contract of Affreightment—Termination by Abandonment of Ship.—The involuntary abandonment of a vessel by her master and crew under stress of weather, without any actual intention to renounce the contract of affreightment between the ship and the cargo owners, does not terminate such contract, but on the bringing of the ship into port by salvors in a condition to resume her voyage without unreasonable delay the master is entitled within a reasonable time to reclaim the vessel and cargo, and on indemnity to the salvors to take the cargo to the stipulated port of destination. The Eliza Lines, 114 Fed. Rep. (U. S.) 307.

Injuries to Ship Carpenter.—In an action for a ship carpenter's death owing to the breaking down of a staging on which he was at work, assisting to place cant timbers in position, as a result of a cant timber striking it, an instruction that whatever was necessary or useful to do the work in an ordinarily safe manner, consistent with care and caution, were appliances, whether the same were ropes, engines, etc., or servants, and that it was the duty of the master to furnish all necessary appliances, whether ropes, etc., or servants, reasonably suitable and competent, was not objectionable as binding the master, at all hazards, to furnish competent fellow servants instead of requiring him to use reasonable care in their selection and retention, other instructions stating that the master would discharge his duty in this respect by exercising reasonable care to provide competent fellow servants. Sroufe et al. vs. Moran Bros. Co., 68 Pac. Rep. (Wash.) 896.

Evidence Considered.—A large steel barge laden with freight cars, while passing up the Elizabeth river to Norfolk, at about five in the evening, in tow of an ocean tug, came into collision with the steamship Jamestown, which was passing down. The barge was on the hawser of seventy to one hundred fathoms, the tide was flood, and a gale from the northwest made it difficult to control the tow, so that the two vessels occupied the greater part of the channel. This fact was known, or should have been, to the Jamestown, which saw the tug and tow when two and one-half mile away, but kept its speed of fourteen or fifteen miles an hour until opposite the tug, when its effort to avoid collision by stopping and reversing came too late. Held, that both the steamship and the tug and tow were in fault, the former for approaching at too high a speed and failing to stop before there was danger of collision, and the latter because it was negligence, under the circumstances, to enter the channel, at a time of day when outgoing steamers were known to be coming down, without shortening the hawser, or taking other measures to bring the barge under closer control, she having been to the east of the center of the channel at the time of collision. The Jamestown, 114 Fed. Rep. (U. S.) 593.

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CLEVELAND, O., JUNE 19, 1902.

THE regular passenger traffic, including the tourist and excursion service, may now be considered as opened for the season. The outlook is a very gratifying one to the shareholders in steamboat lines, as a good paying season seems to be already assured.

ON THE inquiry held at Duluth regarding the sinking of two steamers, the local inspectors of steamboats found that no passing signals were exchanged between the Hadley and Wilson, although they were approaching each other nearly head on. The movement of the Hadley in starboarding her wheel when too near to avoid a collision, was, the inspectors found, not authorized by any rule. The fault of the Wilson was in continuing at full speed after the Hadley had turned towards her. It was also found that no alarm signals were used by either ship.

THE PRESIDENT has signed the River and Harbor Appropriation Bill. It is an important measure for all lake harbors, and now that it has become a law, interest will immediately become active as to the American composition of the International Commission which it authorizes for consideration of the project of maintaining lake levels. It seems certain that the members of the Canadian Commission will not seriously object to the wastage going on through the Chicago drainage canal when so many similar tapping projects are on foot on their side of the border.

THE TONNAGE of British and foreign sailing and steam vessels, including their repeated voyages, that entered and cleared at ports in the United Kingdom, with cargoes and in ballast, from and to foreign countries and British possessions, including protectorates, in the year 1900 aggregated 98,523,693 tons. In this total no results are given for the trading of British vessels between two ports both of which are in foreign countries, or between two ports both of which are in British possessions, and Mr. Norman Hill, the secretary of the Liverpool Steamship Owners' Association, says he knows of no returns which give these figures. As in many other particulars, it appears that the British are also away behind the race in statistical information in spite of, or is it on account of, the innumerable blue books issued by that government.

PORT AND STARBOARD — RIGHT AND LEFT.

The question is again brought before the attention of the British mercantile marine, and to that extent to the attention of other maritime nations, regarding the advisability of altering the helm orders from "port" and "starboard" to "right" and "left."

The contention is one of long standing, and in some instances of adoption in national and mercantile navies, but it has not prevailed, or in fact obtained any foothold in the United States or the United Kingdom up to the present, but, there is sufficient evidence at hand to warrant the belief that the change of terms may possibly obtain in the near future.

The first intimation of such a change being thought desirable was through the publication of a pamphlet about a quarter of a century ago, since which time arguments pro and con, and reasons as plenty as blackberries, have been advanced on both sides of the controversy. In the case of the German war ship Grosser Kurfurst, with six men at her wheel, three interpreted the fatal order which sent nearly 300 souls to a watery grave, in one way and three the other. On fully learning the circumstances the German Emperor authorized the words rechts (to the right) and links (to the left) to be used in all the ships of his increasing navy, but then it should be considered that the German ruler is a "war Emperor" with a military predilection, and where naval customs, practices, or phraseology would be likely to clash, the rules of the former would doubtless in all cases be made mandatory.

The first step having thus been taken in the German navy, it was found in order for France, Italy, Austria, Portugal and Sweden to adopt similar phraseology in their navies, also to some extent in their mercantile marine, and notably so in the most important lines of passenger carrying steamers, but unanimity does not exist in the practice of any one nation where a departure has been taken from the old terms of port and starboard. Passing over for the moment the continued controversies in British journals devoted to maritime affairs, we find the subject being dealt with several years ago among the nations of the north of Europe, and as a general statement, Denmark, Norway, Sweden and other countries, were in favor of the proposed change of revision of orders, and so as to make the vessel's head swing in accordance with the given command, that is, the order port would mean that the vessel's head should swing to port and not to starboard as the majority of tonnage now demands. In parenthesis, we may add, that the prevailing custom supposes the word "avoid" to precede the order port or starboard, as for instance, avoid port, or avoid starboard, and in so understanding an order the vessel's head moves in consonance therewith. In the reference to the countries of the north of Europe the question appears to have rested principally, not on the change of words, but in the direction indicated by the order, and so that port would mean direct the vessel's head to port, and starboard, that the vessel should swing to starboard, that is, her head, not her stern.

The order being given to port the helm, the wheel and the vessel's head now moves to starboard, and vice-versa when the wheelsman is told to starboard, which, to the landsman, seems a contradiction in terms, but for that matter, many other nautical customs and rules are equally as enigmatical to the uninitiated, at the same time, casualties arising through mistaken helm orders are very rare, and remarkably exceptional, hence, the fear that any alteration or tampering with helm orders might lead to and invite all sorts of casualties, especially while in the transition stage or period necessary for the universal adoption of either change. It can readily be understood why the change from port and starboard to right and left did not meet with general approval when the commerce of the world was chiefly carried on under square canvas, and no one even now seems to desire any change from the prevailing custom, otherwise than as helm orders are concerned. The left hand side of the ship looking forward will still be the port side, and the right the starboard side, so may also the funnel or smoke-stack shrouds be named, the position of life-boats as well as all other phraseology denoting the right or left side of a hull, the tackle, apparel and furniture, outfit, equipment, etc. It is not argued, required or counselled that military terms and ordinary shore parlance should supersede well-advised and barnacle-backed nautical phraseology only as in the seemingly paradoxical case of helm orders. A lookout may still report a light "about four points on the port or starboard bow" and be mentally consigned to limbo if he doesn't blow it out, or a vessel in the same position and be similarly requested to shove her off, nor need he talk about the low side of the fence when the lee bulwarks are meant, at the same time, always remembering that he must be looking forward when told that anything is to the right or left of him, when, or if such terms are to generally prevail.

The change from sail to steam, the unusually short time now required to make helmsmen, the shore terms of right and left being known by even the most illiterate from boyhood, all argues in favor of telling a steersman to alter or move the helm to the left or right instead of port or starboard and should be adopted forthwith. To accomplish this result it is only necessary for each steamship company to issue an order to the captains, officers and pilots, in their service, to at once discontinue the use of the "port" and "starboard" helm orders, and substitute for them "right" and "left" the custom would soon become universal and by that time the Board of Supervising Inspectors of Steamboats might waken up to the sense of fitness of the change and legalize the common sense terms by the enactment of another revised statute.

WHISTLE SIGNALS.

While awaiting the action and decision of the local inspector of hulls at Toledo in the Frolic-Woods collision case, which occurred on May 7, involving loss of life, the Wilson-Hadley collision, which took place off Duluth harbor a month later, or on June 7, has been heard and decided by Mr. John Monaghan, local inspector of hulls at that port and both masters found at fault, one license being cancelled and the other suspended for sixty days.

In this decision, as in all others, it appears to be a matter of form to attach the boiler inspector's signature to all judgments, perhaps to allow the verdict to assume a ponderosity of authority or official weight, but in reality and practice, just as a pleasant fiction or make-believe, for, but few of the local inspectors of boilers would even countenance the assumption that they are, or ever were, practical and judicial experts in the "Rules of the Road."

The cause of the Duluth casualty, involving the loss of nine lives and practically two large steamers with their cargoes, is no longer *sub judice* and therefore comments or expressions of opinions are quite in order.

On a perusal of the findings of the Duluth inspector the reader will no doubt be surprised at the frequent use of the weight given to whistle signals, for the case of both vessels hinged solely upon whistle signals, or the lack of such, and in the future, it should be known and read of all men in charge of lake vessels that the whistle is the main guy, the halliards, so to speak, of the "Sailing and Steering Rules," and to which the helm action is but a secondary motion or motive.

Article 20 of the "Rules to Prevent Collisions" states: "Where, by any of these rules, one of two vessels is to keep out of the way, the other shall keep her course and speed." This rule the steamer Thomas Wilson appears to have strictly observed up to the point of imminent collision, and, then being *in extremis*, she ported, and this too, in accordance with Rule 27, which, as we have previously stated is the qualifying rule, modifving or annulling all others and which reads as follows: "In obeying and construing these rules due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the rules necessary in order to avoid immediate danger." Therefore, the Wilson, throwing all rules overboard and departing from such, including whistle signaling, ported, a proceeding which the hull inspector admits as being the only way to avoid a collision, a very singular admission. seeing that it immediately brought about the collision. The inspector further states that the Hadley. in changing her course was "not authorized by any rule." This again is a rather negative way of stating the case when the whole body of the rules show that the giving way vessel must keep clear, it matters not what she does under ordinary circumstances, such as prevailed in this case, she must simply keep clear. She may go slow, stop, reverse, describe a circle, or be handled in any manner as long as she keeps clear of others having the right of way.

The "Steering and Sailing Rules" apply equally to sail-

ing vessels, and we call the attention of our readers as well as the inspector to the fact that the law authorizes no special or particular manner in which the giving way vessel shall keep clear, and it is technically and practically proper that the law should not seek to do so, for, the vessel whose duty it is to give way, must be given the right of action in carrying out any manoeuver which she may see proper in order to safely keep clear of those having the right of way.

In the case in question, the findings of which is given in another column of the RECORD, the vessels were proceeding on parallel lines and opposite courses, a situation which did not involve action in so far as the "Rules of the Road" were or are concerned, because, there was no danger of collision, nor in such cases can there be any as long as the two vessels maintain their respective courses. We read, however, in the evidence presented before the inspector, that the one vessel was so far to the north of the other that passing signals were considered unnecessary, at least none were given. The inspector ruled that the position of the vessels should have been understood as approaching each other end on or nearly so and that it was the duty of each to signal by whistle and then to port, a rational decision if their actual positions were such as assumed.

To the average understanding of a majority of pilots it will no doubt appear that the Hadley in describing a semi-circle from her position north of the Wilson, and cutting the latter vessel down by running into her port side, was clearly and solely at fault, and that the Wilson by porting *in extremis* had acted skillfully enough to suit the inspector's views, if she had only blown her whistle right along, or in other words if the master of the Wilson had been handling the Hadley as well as his own vessel no collision would have occurred.

LOCAL ATTRACTION AND VARIATION MIXED.

Someone, apparently in ignorance of the formation of sailing charts, has been writing the engineer office at Detroit regarding the issuance of a magnetic chart of Lake Superior. Major W. L. Fisk, Corps of Engineers, U. S. A., who is in charge of the lake survey office at Detroit, says:

"The subject of magnetic observation has received considerable attention in this office and it is intended to continue them in connection with the other work of the lake survey as has heretofore been done. As to whether a special chart devoted to magnetic curves only is desirable is a question not yet decided. Our charts now show the latest magnetic determinations at all places where reliable observations have been taken, and it seems quite probable to me that this would be more convenient than to be obliged to go to a special chart for such information. As the magnetic variation at Grand Marais, Minn., determined in May, 1887, varies from two degrees west to nearly twenty-four degrees east within a distance of about a mile, it is quite evident that a magnetic chart would be of little use in that particular locality."

Major Fisk fully realizes the difficulty of determining the curves of local magnetic attraction among the veins of iron ore in the vicinity of Grand Marais, besides, it is the work of the mining professional or prospector to locate the degree of attraction in such districts, and not the pilot or sailing master. So, even with a knowledge of the geological formation and consequent local attraction of the magnetic needle, it would be, as Major Fisk intimates, of little use to the person afloat and working along on a course clear of the coast line or spots wherein local attraction developes.

ADMIRAL Melville U. S. N., announces a notable advance in oil fuel combustion, which indicates that the Navy may soon dispense with coal. A board of engineers under his direction has succeeded in producing one-third more steam from a standardized boiler with oil than was possible with the best coal, and it is thought that the use of liquid fuel is on the point of tremendous development for marine purposes. In careful tests, extending over a whole year, the value of coal as a fuel has been accurately determined, and in the last week the same boiler has been fired with oil in the preliminary series of exhaustive tests, which will last several months. The result from the first have astonished the skilled experimenters, and, while the wild claims of oil boomers are in no likelihood of verification, it seems almost certain that oil fuel will supersede coal as a controlling element of naval warfare.

SHIP BUILDING CO. BUYS STEEL WORKS.

Daniel Leroy Dresser, president of the Trust Company of the Republic, announces that his company has completed negotiations for the purchase of the Bethlehem Steel Co. by the newly formed United States Ship Building Co. A large portion of the output of the Bethlehem Steel Works is armor plate.

Lewis Nixon said of the purchase: "It gives to the United States a company capable of building a battleship complete with armor and all equipment. No such company exists elsewhere in the world. Arrangements have been made with the United States Steel Corporation by which prompt deliveries of hull steel on favorable terms will enable us to promise vessels absolutely on time.

The Bethlehem Steel Co. was organized in 1889 with a capital stock of $15,000,000, all common, par value $50, upon which $1 per share was paid. Later the company leased the Bethlehem Iron Co., the capital stock of the latter concern being $7,500,000. In August, 1901, the combined companies were purchased ostensibly by Charles M. Schwab, president of the United States Steel Corporation, the purchase price being $24 a share for the 300,000 shares. The real purchasers are said to have been a syndicate of stockholders of the United States Steel Corporation. The bonded debt of the company is $8,851,000. The products of the corporation are armor plate, gun forgings and steel forgings for marine stationary engines. The plant is located at South Bethlehem, Pa., and extends over an area of thirty acres under cover. The officers are: Edward M. McIlvain, president; E. Borie, vice president; H. S. Snyder, secretary treasurer. Directors—R. P. Linderman, E. T. Stotesbury, E. M. McIlvain, Archibald Johnston, George F. Baer, J. P. Ord, and Charles McVeagh.

LOCATION OF WRECK.

A survey party from the U. S. Engineer's office, Duluth, have completed their soundings of the locality of the sunken whaleback steamer, Thomas Wilson. The hull itself lies on the bottom about as follows: North, 5 degrees west, true bearing and north 13 degrees west magnetic bearing. The Wilson lies in seventy feet of water, 1,560 yards from the lake end of the ship canal and about 340 yards south of a line of axis of the canal if the line was prolonged. It is 187 yards south of the usual sailing course to Devil's Island. The true bearing of the wreck from the light-house on the south pier is north 75 degrees east and the magnetic bearing north 67 degrees east, showing 8 degrees variation in that locality, or ¾ of a point.

Capt. Gaillard, Corps of Engineers, U. S. A., in charge of the district, has notified the lake survey office at Detroit, the U. S. Engineer at Houghton, the "Soo" and the chief engineer of the U. S. Army. Only a little discolored water made reddish from iron ore now shows the spot where the ill fated boat sunk. Occasionally little air bubbles come to the surface.

LAKE FREIGHTS.

Iron ore freight rates rule steady at season rates with fairly brisk chartering, and less detention for vessels at both ends of the route. The several day's blockade at the "Soo" permitted the receiving docks at ports of discharge being well cleared up, and this advantage has been maintained, a more liberal supply of cars allows the sending of iron ore forward to furnaces, and with no further delays the month has yet time to make a fairly good showing in the Lake Superior iron ore trades. Last season showed shipments of 20½ million tons, this season the record is expected to reach 24 million tons, and the figures as already worked out makes this quantity well within the bounds of probability.

Coal freights remain unchanged at 45 cents to Lake Michigan from Ohio ports, with steady chartering since the Pittsburg Coal Co. placed the ½ million tons two weeks ago, at 40 cents to Escanaba, and 35 cents to the head of Lake Superior, on season charters. Two small cargoes of anthracite, the first for the month, were placed this week at Buffalo at 30 cents.

The demand for grain tonnage at Chicago or Duluth is simply nominal, a few scattering cargoes being placed at shaded rates, wheat from Chicago to Buffalo paid 1¼ cents. The freight market can be said to be lifeless, with not enough movement to supply even the line boats.

The lumber rate from ports at the head of Lake Superior still holds at $2.50, and the indications are that the shippers will not be able to force a cut. A number of barges were dropped last week and others are slated to go to the dock unless there is an improvement in the trade. The tonnage is plentiful and the bidding for it continues to increase. The situation is more hopeful now from the standpoint of a vessel owner, than it has been at any time since the decisive action of the Lumber Carriers' Association in May. It is admitted, however, that the crisis is not past, and that the owners have not established absolutely the $2.50 rate from Duluth. There is still that element of risk about it which prevents many of the owners from withdrawing their tonnage from ordinary. Indeed, it is said that the shippers would have more lumber to offer were it not that they are holding back loads with a view to breaking the rate.

FLOTSAM, JETSAM AND LAGAN.

Capt. Cameron, who was suspended for sixty days by the Local Inspectors at Duluth, will sail the barge Marcia until the period of his suspension expires.

The tug trust officials have asked the steamboat inspector at Marquette to revoke the license of Capt. Benson, master of the tug Schenck, at that port, to the time of the strike. Conspiracy, the same charge they have preferred against the strikers at Buffalo, Cleveland, Chicago and other ports, is alleged.

Joseph L. Carozzi, Editor-in-chief of the Syren and Shipping, the London weekly, devoted to shipping interests, arrived in New York last week, on the St. Louis, from Southampton. Mr. Carozzi comes here to establish an American publication under the same name and devoted to the same interests, or as the English say "just to have a look around, you know."

Coal vessels drawing over thirteen feet six inches chartered for Racine, cannot reach the coal docks above State street, the second bridge from the harbor. The Bacon, of the V. Swain tow, loaded with 1,700 tons of soft coal for W. H. Pugh, blocked the channel for five hours, going aground while being towed to her dock. The Bacon drew a foot more than the river depth.

What is said to be the largest cargo ever sent to Fort William was shipped a few days ago from Ashtabula. The steamer Steinbrenner loaded 6,696 tons of coal for that destination. Besides her cargo she took on 273 tons of fuel. The new steel steamer Steinbrenner was built by the Jenks Ship Building Co., Port Huron, and this 7,000 ton cargo is not the best she can do on a fair draft of water.

The tugs Robert Emmett and Winslow, and one other tug belonging to the Saginaw Bay Towing Association were sold last week. Of the 20 tugs in the fleet there now remains but one as a reminder of the enormous rafting business the firm carried on for nearly a quarter of a century. The Emmett was sold to Chicago parties for $5,000, and the Winslow to James Reid for $16,000.

The New York Marine Journal says: "The Boutell Transportation & Towing Co., of Cleveland, O., D. McCarthy, manager, has moved its eastern office from Boston to New York, and located at 17 State street: This company transports coal along the Atlantic coast in "lake" barges. The improvements at Sault Ste. Marie and the Canadian locks make it possible to bring such "lake" barges to the ocean for coast work. It is, of course, well known that the canals do not accommodate lake and coast traffic. The Boutell Towing Co. and its towing business is exclusively coastal, though formerly doing business on the lakes.

A note in a bottle picked up forty-five miles east of Halifax, N. S., states that the steamer Huronian capsized, and that the writer with thirteen others was in a small boat. This is the first that has been heard from the Huronian which started from Glasgow for St. John, N. B., on February 7, last, and for which diligent search has been made by British naval vessels. No doubt everyone who sailed on her perished, some of them perhaps in great misery, as the few lines committed to the care of the bottle by persons in the open boat would indicate.

During the blockade of the American lock at the "Soo" recently, the Canadian lock handled 396 vessels of a total net tonnage of 600,000 between Friday morning and the following Wednesday noon.

Successfully to shoot the most dangerous portion of the St. Mary's rapids in a small boat—the first time on record that the feat has been done—has been the thrilling, though involuntary, experience of John Trombley, an employe of the Sault Ste. Marie canal. Not one out of a thousand like trips could be made without loss of life, is the general opinion. The man had been fishing for trout and started to return home. When in the swift current in the middle of the river one of the oar locks became useless, and, despite Trombley's efforts to make headway with one oar, he was steadily drawn into the seething rapids. Lying flat on the bottom of the boat, with hands grasping the sides, Trombley was carried safely to the foot of the rapids. Here he was bravely rescued by two Indian fishermen, a fact in itself no small feat.

The new turret steamers, Turret Cape and Turret Court, that are to run in the grain trade on Lake Superior, will soon be in service on the lakes. Those who have seen them say they are not very handsome looking craft, but are in some respects superior to the whalebacks, as their hatchways, three in number, run lengthwise of the vessel, and can be battened down securely. The turret is a steepled extension of the deck, which brings the hatches high, but makes them too high for an elevator leg. The steamers are owned in Newcastle, England, and have been sent over here as an experiment. They will carry wheat from Port Arthur to Midland and other Georgian Bay ports, as a feeder to the Grand Trunk railways, and will carry 100,000 bushels on Sault river draft. There are quite a large number of this class of steamers in English service, and they appear to be good cargo carrying and seaworthy craft. They are often seen in New York and other salt water ports. Only a few of them are short enough to navigate the Welland Canal. The third steamer, the Turret Chief, is to come over later this season.

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NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—NEW YORK AND MICHIGAN.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., June 16, 1902.

LAKE ONTARIO.—BRADDOCK POINT LIGHT-STATION.—Notice is hereby given that, on or about June 30, 1902, the 3½ order fixed white light will be re-established at this station, and the temporary fixed white lens lantern light, now shown from the top of the tower on its northerly face, will be discontinued.

The station is located on the southerly shore of Lake Ontario about 2¾ miles west-northwesterly from Braddock Point, New York.

DETROIT RIVER.—LIMEKILN CROSSING SOUTH LIGHT-VESSEL.—Notice is hereby given that on May 31, 1902, Light-Vessel No. 54 was replaced on her station, at the westerly side of the southerly end of Limekiln Crossing dredged channel, lower part of Detroit river, Mich., and Relief Light-Vessel No. 63, temporarily marking the station, was then withdrawn.

No change has been made in Light-Vessel No. 64, as to characteristics of light, fog signal, or general appearance.

LAKE ST. CLAIR.—GROSSEPOINT LIGHT-VESSEL STATION.—Notice is hereby given that, on or about July 1, 1902, Light-Vessel No. 10 will be withdrawn from this station and the station will be marked, temporarily, by a gas buoy, painted red and showing a fixed white light.

The station will be marked later by Light-Vessel No. 75, and due notice will be given when the date for placing the vessel on the station can be determined.

The station is located on the southeasterly side of the upper end of the Lake St. Clair Twenty-foot Channel, Lake St. Clair, Mich.

By order of the Light-House Board,
GEORGE C. REMEY,
Rear Admiral, U. S. Navy,
Chairman.

CANADIAN LIST OF LIGHTS AND FOG SIGNALS.—NEW EDITION.—A list of all the lights and fog signals in the Dominion of Canada, corrected to the 1st April, 1902, has just been published. Copies will be supplied to mariners free on application.

LAKE ERIE.—PELEE PASSAGE MIDDLE GROUND.—GAS BUOY DISCONTINUED.—The gas buoy heretofore maintained off the northeast point of Middle Ground shoal, Pelee Passage, has been permanently discontinued, the middle ground being sufficiently marked by the new light-house as well as by the three spar buoys established in 1901.

LAKE ERIE.—PELEE PASSAGE.—GRUBB REEF.—GAS BUOY ESTABLISHED.—A gas buoy has been established by the Government of Canada in 25 feet of water on Grubb Reef, Pelee Passage. The buoy is a cylindrical iron buoy, painted red, surmounted by a red can-shaped slatwork cage bearing a red lantern, from which an occulting white gas light is shown, elevated 8 feet above the water. The light should be visible 4 miles from all points of approach. It is cut off automatically for a short time at intervals of about 10 seconds.

The following sextant angles were taken from the buoy:

Remains of old pier on Pelee spit (the Dummy)
Light-house, ... 0°
Middle Ground, Pelee Passage Light-house..... 99° 3′
Pelee Island Light-house ..... 19° 1′

LAKE ERIE.—DETROIT RIVER ENTRANCE.—WRECK OF "MONT BLANC" MARKED BY BUOY.—A red spar buoy has been moored a little to the south of the sunken wreck of the schooner "Mt. Blanc," about 1 mile east of Bar Point Light-house at the mouth of Detroit river, northward of the regular track of vessels but where it might be dangerous to small vessels which cut across the point.

GEORGIAN BAY.—PARRY SOUND.—DEPOT HARBOUR.—STORM SIGNAL STATION ESTABLISHED.—A storm signal station has been established by the Government of Canada at Depot Harbour on the south side of Parry Sound, from which the storm signals used throughout the Dominion will be shown. The steel signal mast, with the steel tripod from which it rises, is 50 feet high, and stands upon a bluff 50 feet above the water level of the lake, and 1,800 feet northeast of Supply Point. It can be located when outside Three-mile Point on the horizon, at an apparent distance of 300 yards east of the large grain elevator which is situated just southeast of Supply Point.

F. GOURDEAU,
Deputy Minister.

DEPARTMENT OF MARINE AND FISHERIES,
OTTAWA, CANADA, 3rd June, 1902.

Pilots, masters and others interested are earnestly requested to send information of dangers, changes in aids to navigation, notice of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Chief Engineer, Department of Marine and Fisheries, Ottawa, Canada. Such communications can be mailed free of Canadian postage.

All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

TREASURY DECISIONS.

EXTENSION OF ROUTES OF MASTERS AND MATES.

Routes of masters or mates of ocean or coastwise steamers can not be extended unless the applicants for extension are navigators.

TREASURY DEPARTMENT, June 5, 1902.

SIR: The Department is in receipt of your letter of the 2d instant, with inclosures, in which you charge the local inspectors at Charleston, S. C., with having treated you unjustly, in that those officers had refused an extension of your license as master and pilot of steamers to cover the Atlantic Coast waters from New London, Conn., to Key West, Fla., in addition to the waters named in your present license, issued September 10, 1897, for a term of five years from date thereof, the reason given by the inspectors being that you are not a navigator—a fact admitted by yourself in your letter.

In reply, you are informed that, having given careful consideration to your complaint, the Department can find no sufficient cause therefor, the local inspectors at Charleston having been governed in their decision in your case by the rule of the Board of Supervising Inspectors governing such cases, namely, section 14, Rule V, which provides that "no original license as master or mate of ocean or coastwise steamers shall be issued to any person, or grade of license raised, or route extended, who does not understand navigation and who is not able to determine a ship's position at sea by observation of the sun, to obtain longitude by chronometer, and to determine a ship's latitude by meridian altitude of either the sun, moon or stars," such examination to be in writing and kept on file for reference.

Had the local inspectors not strictly observed the above-quoted rule in your case, and had conceded your request, they would have laid themselves liable to dismissal from office. * * *

Respectfully,
LESLIE M. SHAW, Secretary.

Capt. ISAAC C. RELYEA, Charleston, S. C.

EXPLOSIONS ON PASSENGER STEAMERS.

TREASURY DEPARTMENT, June 3, 1902.

SIR: This office is in receipt of your letter of the 28th ultimo, in behalf of the Masurite Explosive Company, in which you refer to the receipt of a letter from the New York and Cuba Mail Steamship Company, in which that company informs you that it is impossible for them to handle masurite on their passenger steamers between New York and Mexican ports, by reason of advice from this Department, dated the 15th instant, "under the precautionary requirements of section 4472, Revised Statutes, in relation to dangerous articles."

In reply, you are informed that the Department assumes that the advice received by the New York and Cuba Mail Steamship Company, dated the 15th instant, refers to a letter from the Supervising Inspector-General, Steamboat-Inspection Service, to Mr. S. C. Neale, the attorney of the company in this city, the substance of which is approved by the Department, and is quoted herewith for your information, as follows:

MAY 14, 1902.

SIR: I am in receipt of yours of the 12th instant, and a small bottle containing a sample of so-called masurite, alleged to be "a new, powerful, and absolutely safe explosive."

In reply to your request for a ruling as to whether the Department considers that the explosive referred to can be safely accepted and safely carried as freight on passenger steamers, would say that after due consideration of the precautionary requirements of section 4472, Revised Statutes, against the carriage of "dangerous articles" on passenger steamers, this office must respectfully decline to take the responsibility of deciding that so powerful an explosive as "masurite" is claimed to be by its manufacturers can be safely carried as freight on passenger steamers, notwithstanding the claims presented in their printed pamphlets that the material can only be exploded by percussion.

Respectfully,
JAS. A. DUMONT,
Supervising Inspector-General.

MR. S. C. NEALE, Washington, D. C.

Referring to your suggestion that the Department send a representative to Sands Point on the 14th instant to witness certain proposed tests of the alleged safety of "masurite," and to suggest additional tests for the same purpose, you are informed that the Department, notwithstanding the success of your tests, if they should be successful, would not be disposed to decide that so powerful an explosive as "masurite" is claimed to be by its manufacturers could safely be carried on passenger steam vessels, but would prefer, if passenger steamers do take the risk of its carriage as freight, that the courts take the responsibility of deciding the matter, in case of prosecution for the penalties provided for a violation of the provisions of section 4472, Revised Statutes.

Respectfully, O. L. SPAULDING, Acting Secretary.

MR. T. LUDLOW CHRYSTIE, New York, N. Y.

Steamship and Barge in Tow—Fault of Tug.—The tug Sea King was coming up the lower New York Bay, having two barges in tow tandem, in all about 1,200 feet long, when the second barge came in collision with the steamship Buffalo, outward bound, and was sunk. The collision occurred from 250 to 300 feet to the westward of the center of the channel. After signals for passing port and port were exchanged between the Buffalo and the Sea King, the latter ported her helm two points, and continued on such course until she had passed, and then at once resumed her former course. Held, that the Sea King was in fault for failing to take proper measures to counteract the effect of the flood tide, which drifted her and her tow into the westward side of the channel, contrary to rule 25, and also in resuming her course before her tow had passed the Buffalo. Held, also, under the evidence, that neither the barge nor the Buffalo was in fault; that, while the latter was aware that the tow was drifting nearer her course, after the tug ported both she and the first tow drew away and passed at a safe distance, and had she continued on such course, as the Buffalo had reason to expect, the second tow would also have been drawn out of danger, and that after the danger became apparent she made all proper efforts to avoid collision. The Sea King, 114 Fed. Rep. (U. S.) 535.

COMMERCIAL ALASKA IN 1902.

"Commercial Alaska in 1902" is the title of a monograph prepared by the Treasury Bureau of Statistics for publication in the forthcoming issue of the Monthly Summary. In this the commercial conditions, opportunities and prospects in Alaska are set forth, the number of industries at the present time, the routes of travel, the methods of reaching that once distant but now accessible territory, and a summarization of the commercial and financial results of ownership of that territory by the United States. This statement is presented at the present moment both by reason of the growing interest in Alaska and especially because of the fact that the Bureau of Statistics is to publish in future monthly statements of the commerce of Alaska with ports of the United States. Heretofore no detailed statistics of commerce with Alaska have been obtainable because of the fact that no provision of law existed for collection of statistics of commerce between customs districts of the United States; and as Alaska was by law a customs district, such statistics could not be gathered under the law. When the Hawaiian Islands and Porto Rico were also made customs districts of the United States and the collection of statistics of our commerce with those islands was rendered impracticable, a measure providing for the collection of statistics of trade between the United States and all of its noncontiguous territories was framed by the Bureau of Statistics, approved by the Secretary of the Treasury, sent to Congress, passed, and signed by the President; and beginning with the new fiscal year the record of trade between the United States and all of its noncontiguous territory will be available in form similar to that of commerce between the United States and foreign countries.

The fact that statistical statements of the commerce and conditions of Alaska have not been regularly made in the past renders the attempt to present a picture of present conditions in Alaska a difficult one. Necessarily the information is fragmentary. Aside from the statistics of population published by the census, and statements of the number of fur seals taken by the lessees of the Pribilof Islands, the number of cans of salmon packed, and the number of fish taken as reported by the Special Agent of the Treasury Department, and the statements of gold production reported by the Mint Bureau, little information of a statistical nature is available. Even these reports are extremely meager and in most cases the statements are simply those of quantity unaccompanied by estimates of value. The shipments of merchandise between the United States and Alaska have been considered as coastwise commerce and no reports of the value of merchandise so transported have been made to the collectors; wh many cases the manifests are so indefinite in statements of quantity that it has been found difficult to obtain satisfactory estimates in detail of the movements of merchandise into and out of Alaska. The fluctuation of the prices of seal and other furs, and the salmon and other fish, which have been, until recent years, the chief industries of Alaska, coupled with the fact that in the official reports only quantities were stated, have in the past rendered detailed statements of values year by year difficult. The statements which are presented as to the industries and their result from a financial standpoint, are the results of careful inquiries from collectors of customs both in Alaska and the United States by the various governors of Alaska, and their subordinates, and by the special agents of the government appointed to report upon the various industries.

In general terms it may be said that Alaska, for which the United States paid Russia $7,200,000 in 1867, has supplied furs, fish and gold amounting to about $150,000,000 in value, about equally divided between these three items; that the investments of capital from the United States in Alaska are probably $25,000,000 with a large additional sum invested in transportation to that territory; and that the annual shipments of merchandise to Alaska now aggregate more than $12,000,000, and have aggregated since the purchase nearly or quite $100,000,000. Meantime the population has grown from an estimated 30,000 at the date of purchase to 32,052 in 1890, 63,592 in 1900, and an estimated 75,000 at the present time.

The number of fur seals taken on the Pribilof Islands from 1870 to 1901 is 2,187,317,* and the value of the seal and other furs taken since the purchase of Alaska by the United States is estimated at about $30,000,000. The fur seal industry, which has declined in the last few years, was succeeded by the fishing industry, Alaska now supplying about one-half of the salmon of the country. The value of the salmon pack in Alaska last year is estimated at about $7,000,000, and the total value of the fish taken in Alaska since the purchase about $50,000,000; while the value of gold and silver mined since the purchase is also about $50,000,000.

*Estimated value, $35,000,000.

NOTES.

Capt. Fred Ristman, owner of the schooner Wolverine, has sued the city of Milwaukee in the United States court, for $1,200 on account of a collision of the schooner with the Grand avenue bridge.

ONE Polar expedition is accounted for. Baron Toll's Russian expedition in the Sarja, proceeding from the Siberian coast, attained 77 degrees 32 minutes north latitude, north of the new Siberian islands, but was unable to reach Bennett island. It is wintering in Verpinski bay.

So long as the ocean shall remain free and shipbuilding throughout the world shall not cease to be a competitive industry, no syndicate can become powerful enough to monopolize ocean traffic. It is ordained that the tallest trees cannot grow quite into the skies.

THE answer of the Lake Torpedo Boat Co., in the suit began against it in the United States Circuit Court, by the Electric Boat Co., owner of the Holland torpedo boat patents, denies that there is anything patentable in the devices alleged to have been infringed and says that the boat itself, and all the material parts of it, as patented by Holland, were described in scientific books and periodicals dating all the way back to the beginning of the last century.

HARPER'S WEEKLY quotes the following from an address by Isaac Townsend Smith. It was related to me by the late Mr. William H. Webb, the eminent shipbuilder, that the last named ship, the President, was built by a Quaker, and when he had constructed her as far as the port holes for the guns his peace principles forbade his going further. He then went to his partner, who was one of the world's people, and said: "Now thee must go and set in the windows."

A RESOLUTION was offered by A. Foster Higgins, chairman of the Committee on Harbor and Shipping, at the regular monthly meeting of the New York Chamber of Commerce on Thursday last, in effect that the attention of Congress be called to the fact that the practice of towing several deep-laden barges in one line has increased very much, and that these tows are a serious menace to free navigation by other craft and are in themselves a source of imminent danger to the crews of the barges. It was recommended that Congress limit the number of barges in one tow and order the shortening of the spaces between the barges as they approach harbors and rivers.

WHEN the Constitution had cleared for action, and was bearing down to engage with Guerriere, Mr. Morris, the first officer, came to Commodore Hull and said that he ought to make a speech to the men; that they expected that he would say something to them. Commodore Hull was no speech-maker, but it being expected, he replied: "Well, Mr. Morris, pipe the men aft." The boatswain's whistle rang out, and when they were assembled aft, Commodore Hull said: "Men, you see that big ship off there? Well, that is a British frigate. If we capture her it is five hundred dollars apiece in your pockets. Pipe to quarters, Mr. Morris; pipe to quarters." The men gave three rousing cheers, and went to their stations in high good humor.

THE large power plant of the St. Lawrence Power Co., at Massena, N. Y., has been ordered to be sold by a mortgage foreclosure proceedings. The plant will be advertised for sale for six weeks, and will then be sold at Massena to the highest bidder. It is reported that a new company has been organized to bid in the plant, and that a number of large manufacturing interests have been looking it over with the view of establishing extensive works there. It is said that the same interests that are engaged in the production of aluminum at Niagara Falls are contemplating the erection of a similar plant at Massena, and that a steel company has also been incorporated to erect a plant there. It is expected that a 100-ton furnace will be built and put into operation before the close of the year.

THERE is a desk used at the White House by President Roosevelt, says the Tatler, whose history forms a pleasing link between this country and the United States. It was the gift of Her late Majesty Queen Victoria to a former President of the American Republic. The desk was made from the timbers of H.M.S. Resolute that went in search of Sir John Franklin in 1852. The object of the search was never accomplished, for the ship got blocked in ice and had to be abandoned. She was later discovered by an American whaler, and afterwards purchased by the United States Government, and sent back to this country as a gift. It was when the Resolute came back to be broken up in Portsmouth Dockyard that her late Majesty thought of the idea of having a desk made from the ship's timbers and sent to the American Government, in acknowledgment of their kindly courtesy in sending the ship to us.

SHOOTING ST. MARY'S RAPIDS.

Capt. Parker, of Ontonagon, says that John Trombley, of Sault Ste. Marie, is not the only living man who has gone through the St. Mary's rapids and lived. The captain states that there are four persons living who have made that perilous trip, and tells the particulars to the Ontonagon Herald. On June 10, 1847, Capt. Brown, Capt. Stannard, John G. Parker. Dr. Prouty, Thomas Richael, William Flynn and a Mr. Seymour, while sounding the rapids in a yawl boat for the purpose of determining a course for the "Uncle Tom," their craft was capsized and the occupants were carried over these same rapids. Richael, Flynn and Dr. Prouty were drowned, and Mr. Seymour was rescued by an old Indian fisherman, bringing him up from the bottom with a spear. Seymour was a son-in-law of Rev. Bingham, who had charge of the Baptist "Soo" mission at that time.

The following day Capt. Brown, one of the survivors of the catastrophe, left the "Soo" on the schooner Merchant, for up the lake, and that was the last ever seen of the craft or any of the crew. The rest of the party made their last earthly voyage years ago, with the exception of Capt. Parker.

In the fall of the same year Mr. Parker was made captain of the schooner Fur Trader with which he hauled the stone for the erection of the first light-house on Lake Superior, at Whitefish Point. Capt. Parker was born July 12, 1821, and the story of his early life upon the Great Lakes is an exceedingly interesting one, filled as it was with historical and thrilling experiences. Capt. Parker will soon round out his eighty-first mile stone but he is enjoying good health and is still quite active.

A MARINE ENGINEER'S JOB.

A noteworthy feat in marine engineering was accomplished by the engineers' staff of the Empress of India on her last voyage to the Orient. The casting of a large stop valve in the pipe conveying the steam from one of the boilers to the main pipe was found to be badly cracked. Steam was shut off, and the nature of the flaw examined. Its cause was apparent. The valve chamber was in the middle of the large pipe and the pipes on either side were stronger than the chamber. There being no expansion joints on the pipes the chamber cracked, as the temperature of the pipes increased and decreased. The problem was to remedy this. The pipe was parted at the flange joint, and from the inside of the chamber the work was performed. Holes were bored on the inside of the casting, on either side of the crack, but they were not allowed to pierce the outer covering entirely. A half-moon-shaped piece of metal was placed on the inside covering of the crack, bolts being put through and screwed in the holes made in the casting. This held the separating parts together and prevented the cracks growing wider. The pressure when the steam was turned on aided in keeping the protecting attachment in place. The pipe was joined again and the steam turned on. Though the Empress had been greatly delayed she made up the lost time and arrived on time.

THERE is quite a craze just now to convert iron and steel steamers into tankers or bulk oil carriers; attempts are made and others are under consideration to reconstruct the ordinary built general cargo boats into tankers, but it is safe to say that the converted carriers will not or cannot give satisfaction for any length of time. The latest addition to this fleet is the colliers Progreso and Washtenaw, owned by the Saginaw Steamship Co., now on the Pacific Coast. They have decided to send those vessels back to the Atlantic for the purpose of placing them in the oil trade between New York and Texas as tank steamers.

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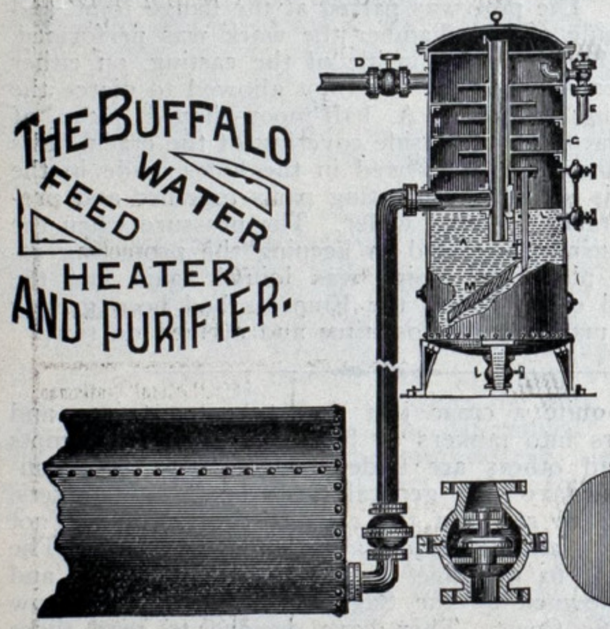

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Minnesota Iron Co.'s steamer Presque Isle.
American Steel Barge Co.'s steamer Alex. McDougall.
Lake Michigan & Lake Superior Transportation Co.'s steamer Manitou.
Bessemer Steamship Co.'s steamers S. F. B. Morse and Douglas Houghton.
American Transportation Co.'s steamers John Harper and Alex. Nimick.
Red Star Line's steamers Robert Mills and Wyoming.
Wilson Transit Line's steamers W. D. Rees and Andrew Carnegie
And the steamer William R. Linn.

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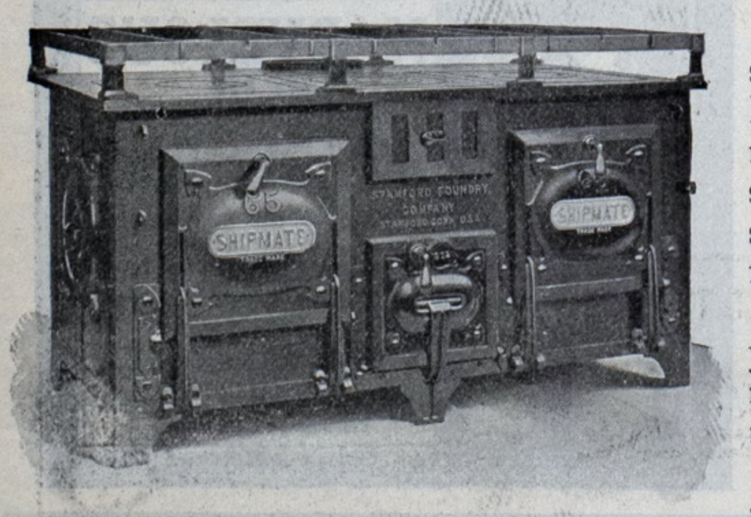

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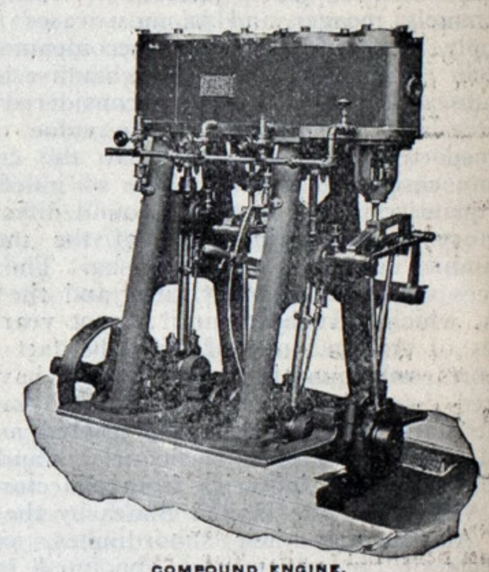

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BUFFALO BREAKWATERS.

In the number of the Engineering News, May 29, appears an article by Major Thomas W. Symons, M. Am. Soc. C. E., Major Corps of Engineers, U. S. A., United States Engineer at Buffalo, which will be read with deep interest, not only by all engineers throughout the country, but by everybody on the lakes who appreciates the importance of the work being done on the new breakwaters.

Throughout the six and a half pages which the Engineering News devotes to this interesting description, Major Symons' text is illustrated by splendid photographs and descriptive drawings, which are illuminating to the average reader and make plain the technical details even to the non-scientific.

Major Symons, in this article, takes up specifically the construction and reconstruction work which is being done with concrete in breakwater work, and shows that the construction at Buffalo is not only one of the largest and most important pieces of concrete construction ever undertaken on the Great Lakes or elsewhere, but in its special development it is the most advanced work of its kind anywhere in the United States.

The illustrations show cross sections of the concrete superstructions at other Lake Erie ports, notably the breakwaters at Dunkirk, N. Y., and the west breakwater at Cleveland, O. In the course of his article Major Symons says:

"The adoption and development of the concrete shell type of breakwater superstructure is regarded as important. It has all the advantages in weight and strength of a solid concrete superstructure at a greatly reduced cost. By varying the size of blocks and thickness of walls and decks and general outline, it can be adapted to locations with different and varying exposures and with great ultimate economy. On account of the high price of timber nowadays, and the low price of cement, a concrete shell superstructure can ordinarily be built at a cost no higher than a wood and stone superstructure, and wherever conditions as to foundation and settlement can be met, it should be adopted in the future.

"The engineers in direct charge of this work have been Messrs. J. C. Quintus and Emile Low, both Members of the American Society of Civil Engineers. The contractors were the Buffalo Dredging Co., of Buffalo. Owing to the great strike of machinists in the spring of 1901 the company was greatly delayed in getting its plant ready for the work. This and various other causes prevented the company from fully completing the work during the season of 1901, but all the cribs were covered and left in a good condition for winter, and the work was finally completed on May 12, 1902."

EASTERN FREIGHT RATES.

Messrs. Funch, Edye & Co., New York., reports the condition of the eastern freight market as follows:

There has been somewhat more activity in steamer chartering for general cargo trades. The timber and deal charterers have pretty well covered their pressing requirements and consequently do not show any anxiety to increase their obligations. Prompt steamers are finding difficulty in securing suitable employment and the coal situation does not tend to assist matters. The Virginia exporters have notified their clients that they cannot deliver coal to any steamers at Newport News or Norfolk whilst the present strike exists, and the outlook for securing spot coal is anything but promising. Grain shippers are not inclined to make any commitments for future months, doubtless preferring to await more definite information as to the prospects of the new corn crop.

The market for sail tonnage remains practically in a dormant condition in the absence of any inquiry of consequence. We may, however, note the charter of a case oil ship to two ports Australia at 15 cents, which is one cent below the last fixture.

Grain to Glasgow, 2½ cents; to Liverpool or London, 3 cents; Bristol or Hull, 4 cents.

Government Proposals.

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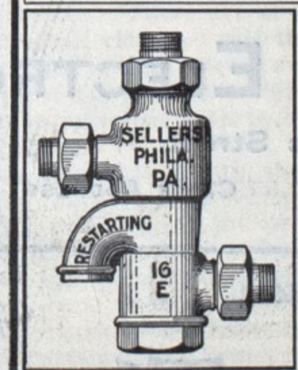

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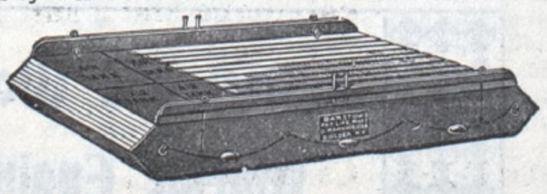
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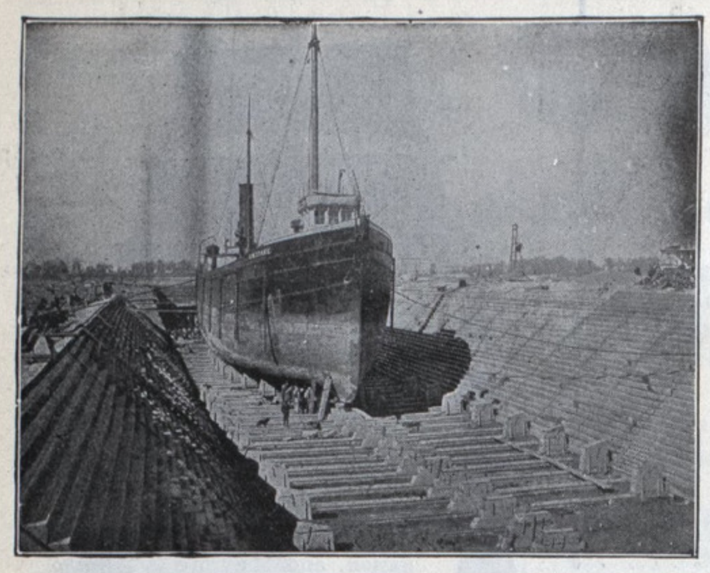

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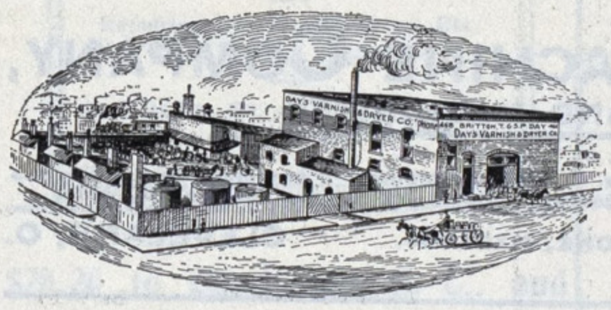

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